WA-Trans Partner Meeting Notes Catalog

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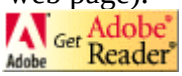
For best viewing, download the latest version of Acrobat here: 

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WA-Trans Partner Meeting Notes
September 8, 2004

Attendees:

Participant	Association	Location Attended
Brian Jones	WSDOT Office of Information Technology	Olympia
Elizabeth Stratton	WSDOT Office of Freight Strategies and Policies	Olympia
Tim Young	WA Dept. of Fish and Wildlife	Olympia
Mark Finch	WSDOT Transportation Data Office	Olympia
Michelle Blake	WSDOT GIS Data Steward	Olympia
Elizabeth Marshall	Marshall	Olympia
Bob Basel	Ferry County	Spokane (V.C.)
Darrel Dirks	Ferry County	Spokane (V.C.)
Jason Guthrie	Lincoln County	Spokane (V.C.)
Steve Rush	Hanford (US Dept. of Energy)	Yakima (V.C.)
Mary Phillips	Benton County	Yakima (V.C.)
Ivar Husa	Benton County	Yakima (V.C.)
Wendy Hawley	US Bureau of Census	Olympia

Facilitator and Note Taker: Tami Griffin

Agenda:

- Introductions
- Financial Status and Grants
- Data Model Review
- Business Rules for Data
- Standards, Core Attribution
- Architecture
- Next Steps
- Action Item Review

Introductions:

Tami presented a PowerPoint presentation for this report. This presentation will be placed on the project website. Most detail will be on the slides. Highlights include:

Meetings for next year – March 9, 2005
September 21, 2005

From 9 a.m. – noon at the Transportation Building, 310 Maple Park Ave. SE in Olympia. Video-conferencing will be available from WSDOT Regional Offices in Shoreline, Vancouver, Yakima, Wenatchee, and Spokane.

New partners include:

Washington Traffic Records Committee
Whatcom County Public Works

The Washington Traffic Records Committee is establishing a strategic plan and WA-Trans is part of that plan. They will be using the strategic plan to be situated to apply for grants when the federal transportation reauthorization is complete. Some of this money would assist WA-Trans.

Financial Status and Grants

Funding is sought from the following sources:

- Grant money from the Washington Traffic Records Committee initiatives (see above)
- WSDOT funding through state budget process (unsuccessful)
- Federal Earmark process
- Department of Homeland Security Information Technology and Evaluation Program (unsuccessful)
- Microsoft ($29,000 granted to develop translator requirements)
- US Geological Survey National Spatial Data Infrastructure (USGS NSDI) Cooperative Agreement (CAP) Grant for participation in The National Map (successful)
    - Federal Amount - $75,000
    - WSDOT Amount - $46,208 (in kind, data, data expertise, infrastructure, data modeling)
    - Puget Sound Regional Council – $22,500 (in kind)
    - Pierce County - $4392 (in kind), $5625 (data and data expertise)
    - King County - $5625 (data and data expertise)
    - USGS – put data in The National Map

  - 2 County pilot and translator implementation
- Transportation Pooled Fund Program in partnership with Oregon Department of Transportation and other state DOTs:
  - Seeking $240,000 for phase I (Walla Walla County, Benton County Washington, Morrow County and Umatilla County Oregon)
  - WSDOT committed $30,000
  - ODOT committee $30,000
  - Project will be posted with National Transportation Pooled Fund Website. Idaho and California have been directly approached.
- Funding approved for 1 FTE Assistant Project Manager for WA-Trans through June 2005.

Data Model Review

A committee was formed to complete the data model to be ready for the Microsoft grant and the NSDI CAP grant. This group has been lead by Roland Behee, GIS Program Manager for Community Transit. WSDOT now has a data modeler working with that group to make sure that the model can be implemented at WSDOT.

- The model is being changed to be multi-modal. There are several unanswered questions that the team is working on.
- When two modes can share the same physical space they will share the same physical segment in the database. There will be multiple mode codes used in that case. When they do not share the same physical space (e.g. Monorail and auto) they will have separate segments.
- Decisions are being made about when segments are divided. They are split where a mode changes.
- There was concern that event tables don't support history. It is being considered that we may need to update and cascade event tables when a segment is retired (when a road changes).
- They are also deciding whether to segment at tribal boundaries, military boundaries, etc.
- Elizabeth Marshall pointed out how important update and edit tracking is. There is need to identify who owns the data and who updates it.

Business Rules for Data

Business rules are being determined in four categories. Those are:

- Segmentation Rules – When do we need a node (point) instead of vertices (segment)
- Attribute Standardization – rules for addressing, street naming, etc.
- Update/Edit Tracking – rules for event table updates and segment ID evolution

- Spatial Accuracy – rules regarding scale, edit tolerances and edge matching.

Several rules under consideration were shared. These are in the presentation. Discussion regarding rules includes discussion about defining jurisdictional boundaries. Mark Finch from WSDOT Transportation Data Office (TDO) commented on the redundancy of data collection efforts and how we need to address that. There was discussion of road authority. The TDO maintains that kind of information. It was decided that the TDO needs to get involved now. Tami will contact Mark Finch to find out who is the right person.

There were questions regarding the function of the TDO. The TDO handles all collision data for any collision on a public roadway statewide (80,000 miles of roadway). The Travel Analysis Branch provides travel analysis and forecasting. They also are responsible for the Highway Performance Monitoring System, which report to the Federal Highways Administration. This includes responsibilities for Federal Functional Classification of roadways. The Highway Usage Branch is responsible for all permanent traffic recorders and short duration traffic counts statewide. They also perform speed studies. The Roadway Systems Branch is responsible for the SRView data collection. SRView is a system that allows someone at their computer to virtually "drive" the state routes across Washington. The TDO develops and publishes the annual State Highway Log, which contains roadway geometric information on all state highways. The TDO is currently locating all state routes and ramps with GPS to an accuracy of +/- five feet. The Technology and Integration Branch makes sure the technical expertise is provided to support all those programs. These combinations of missions make the TDO very interested in WA-Trans.

There was some discussion regarding that business rules change from ownership to ownership. We need to identify which apply to the database and which apply to intermediate processes and software.

Elizabeth Marshall mentioned concerns regarding maintenance. Tami said that every pilot is going to include a maintenance component and considerations. This is core part of the plan.

Standards and Core Attribution

The steering committee has been working on collecting core attribution. Draft core attribution has been developed for: aviation, rail, road, non-motorized, and ferries. No decision has been made regarding which fields are optional and which are

required. Metadata will be based on the ISB standard. No decisions have been made regarding which metadata will be optional, required or excluded from the standard.

Details regarding the core attribution were covered. Elizabeth Stratton from the WSDOT Office of Freight Strategies and Policies Office was wondering when we would consider pipelines. That is not in the scope at this point. A lot of it has to do with what data is available. We do have a steering committee member representing the Washington Utilities and Transportation Commission.

See Appendix A for the latest version of the WA-Trans Standards.

Architecture

There was detailed discussion of the translator part of the architecture because that is a core part of the King-Pierce County Pilot. Detailed requirements are being done in conjunction with Bfirst Solutions, Inc. using the Microsoft grant received. A statement of work for that effort is underway. During the pilot solution providers will have the opportunity to demonstrate that they have a solution that can be customized to meet the need or a prototype will be developed.

Summary information was provided about the rest of the architecture. See Appendix B for a high level conceptual architecture.

Next Steps –

The following efforts are currently under way:

- Work is beginning on defining, at a high-level, policies and processes to support WA-Trans long term. Pilots will solidify a lot of that.
- Complete metadata and data standards, (target: end of October).
- Complete database design, (target: end of October).
- Complete requirements for translator (target: end of November).
- Complete detailed pilot charter and project plan (target: end of October).
- Implement pilot.
- Continue to seek funding.

There is need to get a letter(s) of support from emergency management and response partners to make considerations for homeland security grants more likely.
Please send letters to Tami as follows:
Write: "To Whom It May Concern:"
Make them generic; explain why your organization is participating,
Use letterhead,
Write to: Tami Griffin
Washington State Department of Transportation
Geographic Services
1655 2nd Ave.; Tumwater, WA 98512-6951
PO Box 47384; Olympia, WA 98504-7384

WA-Trans Data Standards – Draft

1.0 Introduction

The Washington Statewide Transportation Framework Project (WA-Trans) was organized to create an electronic map of transportation data for use in Geographic Information Systems (GIS) across the state. The WA-Trans partners have delegated the development of the Transportation Framework Data Standards to the WA-Trans steering committee. These standards are comprised of road, rail, transit, water, air, and non-mechanized transportations modes. The data standards will be used as a guideline for data collection during two pilot projects in the Puget Sound and along the Oregon-Washington border. These standards will be adjusted as necessary for as experience is gaining during these pilot projects.

1.1 Mission and Goals of the Data Standards

The WA-Trans Data Standard will enhance the will and ability of partners to collect and maintain the data, match the ability of the partners to collect and maintain data, allow data quality to improve over time for long term data maintenance and updates, and recognize capabilities of existing technology and upgrade with technology improvements.

1.2 Intended use description

The purpose of the WA-Trans Data Standards is to create a set of common requirements for the collection and exchange of information from a variety of spatial and tabular data sources (GIS, CAD, etc.) This information will create a statewide set of data layers developed as a comprehensive transportation network.

2.0 Scope – Basic Overview of data types, mechanisms

The scope of the WA-Trans Data Standards identifies the modes of transportation data to be collected. It also includes the geographic extent, scale, datum, metadata, linear referencing, feature attributes and data quality. Other relevant information can be found in the WA-Trans Data Model, Architecture and Processes documentation.

2.1 Definitions

Points - A point is a single object with a specific geographic location. Point data can be based on dynamic segmentation of roadways (using mileposts or distance from intersection), x, y coordinates from GPS, or geocoded addressing information.

Lines - A line is a linear feature used to define a shape or represent a contour. A real or imaginary mark positioned in relation to fixed points of reference. Line data can be based on linear dynamic segmentation of roadways.

Event - An event uses tabular information and applies it to one of the available spatially defined transportation modes features to create a point or line feature.

Polygon - A polygon is an area figure having many angles, and consequently many sides; esp., one whose perimeter consists of more than four sides; any figure that creates an area. Polygon data layers will be used as a reference for clipping other data layers.

I expect there will be others as deemed necessary

2.2 Symbols and Abbreviations

ROW	Right of Way
LRS	Linear Reference System
NAD	North American Datum
ISB	Information Services Board
FGDC	Federal Geographic Data Committee
CAD	Computer Aided Drafting
GIS	Geographic Information Systems

Others as deemed necessary

3.0 *Data Characteristics*

The following data characteristics outline required attribution for all transportation modes and attribution for specific transportation modes. These requirements are subject to change based on findings during the two pilot projects.

3.1 Required Attribution

3.1.1 Points

Field Name	**Type**	**Width**	**Description**
SHAPE	Point	9	Road Point placed by software
UNIQUE_ID	Number	15	Framework ID from data steward
X-COORD	Number	15	Longitudinal Coordinate
Y-COORD	Number	15	Latitudinal Coordinate
TYPE	String	?	Type of point event

3.1.2 Lines

Field Name	*Type*	*Width*	*Description*
SHAPE	Line	9	Order of coordinate pairs representing a road segment
LENGTH	Number	16	Calculated length in US Survey Foot
UNIQUE_ID	Number	15	Framework topological ID from data steward
LOCAL_ID	String?	9	
MODEFLAG	String	1	See Mode Domain below (A, D, F, etc.)
RDOWNER	String	50	Entity responsible for maintenance of segment
RDNAME	String	72	Concatenated segment name
DIR	String	3	Prefix direction (N, S, E, W, etc.)
NAME	String	50	Road name
TYPE	String	3	Road type (ex. ST, AVE) component of seg. name
SUFF	String	3	Suffix direction (N, S, E, W, etc.)
ALIASLIST	String	200?	Alias list separated by ';' Keywords and AKA's
FROMLEFT	Number	10	Left low address range
TOLEFT	Number	10	Left high address range
FROMRIGHT	Number	10	Right low address range
TORIGHT	Number	10	Right high address range
ZONELEFT	String	16??	Area descriptor, left side (could be ZIP)
ZONERIGHT	String	16??	Area descriptor, right side (could be ZIP)
FROMMILEPOST	Number	6	Beginning Milepost
TOMILEPOST	Number	6	Ending Milepost
LCITY	String	32	City on left side of segment
RCITY	String	32	City on right side of segment
COUNTY	Number	2	County code for segment
FUNCTIONCLASS	Number	2	Function Class assigned by RDOWNER/SUBMITTER?
PAVEMENTTYPE	String	1	Pavement Type assigned by RDOWNER/SUBMITTER?
S_DATE_MOD	Date	8	Date of last modification to geometry
LANES	String/#	2	Number of Lanes - 2, 4, 6 multidirectional, two-lane…
SPEED	String/#	8/2	Speed limit - Number unless multiple speeds posted?

3.2 Other Data Fields

These are other data fields that the WA-Trans Steering Committee would like to see included for the end product.

Field Name	*Type*	*Width*	*Description*
RDSUBMITTER	String?	50	Jurisdiction Submitting Transportation Information
JURISDICTION	String	20	County, city, State, Feds? (FIPSID)
FACILITY NAME	String	50	Long name
F-NODE	Number	8	From node: start point identifier for the road centerline
T-NODE	Number	8	To Node: end point identifier for the road centerline

3.3 Other Transportation Modes

3.3.1 Bike/Foot

Field Name	*Type*	*Width*	*Description*
MODEFLAG	String	1	N
WIDTH	Number	3	?
PAVEMENTTYPE	String	1	Pavement Type assigned by RDOWNER/SUBMITTER?
OWNER	String	50	Entity responsible for maintenance of segment

3.3.2 Railroad

This information is provided by Jeff Schultz of WSDOT Rail Office, Ahmer Nizam and Dave Cullom of the Washington Utilities and Transportation Commission.

Attribute	Description	Size	Type
Railroad Name	The Name the "line" or railroad company	75	Alphanumeric
Operator	Could be the owner, but may not be	75	Alphanumeric
Line Identifier	To be decided by WSDOT and WUTC. Simplest method that makes sense.	6	Alphanumeric
USDOT Number	A code for all railroad crossings.	7	Alphanumeric
Crossing Code	Type of crossing – over, under, at grade, pedestrian	1	Alphanumeric
From Mile Post	Lower mileage value of segment beginning	6.2	Float
To Mile Post	Higher mileage value of segment end	6.2	Float
Public	Railroad feature part of public railroad line?	1	Boolean (Y/N)
Track Class	Federal designator that indicates various things such as maximum speed allowed. Can be values 0 – 6	1	Numeric
Passenger Train Uses Line	Identifies if a regularly scheduled passenger train uses the line.	1	Boolean (Y/N)
Number of Tracks	Applies both to rail lines and crossings.	2	Numeric
Type of Railroad segment	This could be part of the mode code. Possible values include: siding, mainline, industrial spur	1	Alphanumeric
Warning Device at Crossing	Code identifying whether there is sign, or lights or other types of devices. From the Federal Railway Administration Data	2	Numeric
Train Station	Applies to a node. Indicates there is a train station	1	Boolean (Y/N)
Train Station Name	The name of the train station. Applies to a node	15	Alphanumeric

3.3.3 Aviation

This information is provided by John Shambaugh, Aviation Planner at WSDOT.

Attribute	**Description**	**Size**	**Type**
Airport Identifier	In the US begins with 'K'	4	Alphanumeric
Surface Type	Code	3	Alphanumeric
Instrument Landing Approach	Versus visual	1	Boolean (Y/N)
Arc Code	Size, weight, speed & length of wings from tip to tip (can be used to determine maximum size of aviation vehicle that can land and take off	4	Alphanumeric
Width	Expressed as feet	4	Numeric
Use	This may be covered by mode, includes: apron (parking for planes) taxiway, runway	8	Alphanumeric
Elevation	Expressed as feet	6.1	Numeric
FAA Classification	From the NPIAS – National Plan of Integrated Airport Systems	30	Alphanumeric
State Classification	Washington specific	10	Alphanumeric
Airport Name		100	Alphanumeric
Tower	Is there a tower at the airport?	1	Boolean (Y/N)
AWAS	Stands for Automated Weather Advisory System. Is there one at the airport?	1	Boolean (Y/N)
Owner		30	Alphanumeric
Terminal	Is there a terminal at the airport?	1	Boolean (Y/N)

3.3.4 Ferries

This information is provided by Mark Morin and Teri Haffie.

Attribute	Description	Size	Type	WA-Trans Name
Route Name	Full route name usually includes the cities traveled to or beginning and end cities	50	Alphanumeric	Route Name
Route Length	Can be either nautical or statue miles)	3	Numeric	
International or Domestic	Whether the route is domestic only, or international and domestic. Yes if it is only domestic	1	Boolean (Y/N)	
?	Private or public ownership	10?	Alphanumeric	Operator
Route Abbreviation	This is the abbreviation of the route name.	10	Alphanumeric	Route Identifier
Average Sailing Duration	This is the average duration of sail for a particular route.	4	Numeric	Crossing Time
Terminal Name	This could be an end node for the ferry route, and will likely have a different mode from the ferry route mode.			
Address1	This is the terminal street address	50	Alphanumeric	Road Name
Address2	This is the terminal street address	50	Alphanumeric	
City	This is the city the terminal is in	15	Alphanumeric	
Zip	This is the terminal zip code	9	Alphanumeric	
County	This the terminal the county is in	15	Alphanumeric	
Holding space	This is a terminal by terminal based on average vehicle length	9		Number of lanes
?	Not sure …..			System wide restrictions
?	This would be terminal based			Load restrictions attached to routes
?	This would be terminal based			Length restrictions attached to route
?	This is the transportation mode type, and there would probably be two for ferries, one for the terminal and one for the route.			Mode Carrying Flag
?				To Milepost
?				From Milepost
?				GPS for routes

3.4 Misc Notes (Probably not going to have this in final draft)

Does there need to be a data dictionary that would go into more detail of each attribute in the tables above? Oregon Road Centerline Data Standard Folks have added this information…

There was some discussion regarding functional class. What is the relationship between functional class (Federal Highway Administration's road classifications) and Census CFC's based upon USGS Road classifications 1 –7 from trail to highway. We need to create a crosswalk for them. This may be part of the standards definition.

USGS Code – Federal, State, Paved, etc.

FHWA includes codes for different road types – e.g. 7 – 9: Rural codes; 13, 14, 15, 16, 17, 19 – Urban Codes from collector to major urban arterial.

Ramps – See notations from April meeting on WSDOT ramp system. More research is being done to see how other organizations handle classifying their ramps.
May need an alias name here to use a connector between state and local agency ramp codes.

Data reference points on the boundary layers where jurisdictions cross. Pseudo-nodes with jurisdictional ID.

Mode code domain:

A = automobile & general traffic
B = bus only (as in the bus only freeway on/off ramps)
F = ferry (auto)
H = high occupancy vehicle (bus or carpool)
L = light rail
M = monorail
N = non-motorized
P = passenger only ferry
R = heavy rail
V = aviation (runway)

Others as deemed necessary

4.0 Data Content

4.1 Rules for submission – See processed QA/QC

- Best available datasets must be topologically clean when in GIS format
- Line features should be contiguous across coverage boundaries (i.e. where a single geographic feature is split into adjacent coverages or tiles, it should be edge-matched).
- Every feature (point, line, etc) should have one attribute record.
- Each submitted data layer needs to have complete attributes as designated by the core attributes documentation above.
- Frequency updates will be established and a reminder will be set based data stewards previous submissions
- Must only submit data of which you are steward (facility owner)
- All data will have metadata that will need to be signed off on with data submission.

More information in this area although some of this will be handled when setting up the translator.

4.2 Data Standards

Translator will be used to bring all data to this level and outputs to the level needed by the data requestor.

Sample Data Set Standards

Horizontal Datum:	NAD 83/91
Vertical Datum:	NGVD 88
Projection System:	Lambert Conic Conformal
Coordinate System:	WA State Plane Coordinates
Coordinate Zone:	South
Coordinate Units:	Feet or meters if NAD83/91
Accuracy Standard:	replace with target table
Vector Import Format:	.shp, .dgn, .dxf, .dwg, .mdb
Database format:	.MDB (geodatabase), excel, .DBF, or .txt (.CVS?), XML, .mls, .xls
Metadata:	ISB required and optional

4.3 Metadata Standards

4.3.1 Basic List - Required

Basic information about the data set
- Title, Publisher

Description
- Abstract, Purpose

Time Period of Content

Range of Dates / Times
- Beginning Date, Ending Date, Currentness Reference

Keywords

Theme
- Theme Keyword

Place
- Place Keyword

Data Quality Information

Lineage
- Source Information, Source Time Period of Content

Range of Dates / Times
- Beginning Date, Ending Date

Entity and Attribute Information
- Overview Description, Entity and Attribute Overview

Point of Contact / Contact Information
- Contact Person, Contact Organization, Contact Position, Contact Address
- Address Type, Address, City, State or Province, Postal Code
  - Contact Voice Telephone, Contact Facsimile Telephone, Contact Electronic Mail Address

4.3.2 Working Subset - Required

Status – Maintenance information for the data set
- Progress – Complete, in progress, or planned
- Frequency of updates

Spatial Domain – geographic domain of dataset

Bounding Coordinates
- West, North, East, South
- Theme, and Place Keywords
- Access and Use Constraints

Attribute Accuracy
- Attribute Accuracy Report – explains the accuracy of the features
- Positional Accuracy – Estimate of horizontal accuracy of spatial objects

Vertical Position Accuracy
- Vertical Positional Accuracy Report – Vertical accuracy
- Source Scale
- Source Contribution – info on contribution dataset

Spatial Data Organization Information
- Direct Spatial Reference Method

Raster Object Information
- Raster Object Type

Spatial Reference Information

Horizontal Coordinate System Definition
- Planar
- Grid Coordinate System (name)

State Plane Coordinate System
- SPSC Zone Identifier

Planar Coordinate Information
- Distance Units

Geodetic Model
- Horizontal Datum Name
- Ellipsoid Name
- Semi-major Axis
- Denominator of flattening ratio

Vertical Coordinate System Definition

Altitude System Definition
- Altitude Datum Name
- Depth System Definition
- Depth Datum Name

Detail Description
- Entity Type
- Entity label
- Entity definition
- Attribute
- Attribute Label
- Attribute definition
- Attribute Domain Value
- Enumerated Domain
- Enumerated Domain value
- Enumerated Domain definition
- Range Domain
- Range Domain Max
- Range Domain Min
- Code set Domain
- Codeset Name
- Codeset Source
- Attribute Units of Measurement
- Attribute Measurement resolution

Citation Information
Originator, Publication Date, Title

4.3.3 Recommended Subset

Citation
Supplemental Information
Temporal
Temporal Keyword
Temporal Keyword Thesaurus
Temporal Keyword
Data Set Credit
Security Information
Security Classification System
Security Classification
Security Handling Description
Attribute Accuracy Value
Attribute Accuracy Explanation
Completeness report
Horizontal Positional Accuracy Value
Horizontal Positional Accuracy Explanation
Source Citation
Map Projection
Map Projection Name
Individual Map Projection Descriptions (See FGDC Outline)
Entity and Attribute Detail Citation
Distribution Information
Distributor
Distribution Liability
Standard Order Process
Digital Transfer Options
Online Options
Computer contact Information
Network Address
Network Resource Name
Dialup Instructions
Access Instructions
Technical Prerequisites
Metadata Reference Information
Metadata Data
Metadata Contact
Publication Information
Publication Place
Contact Person Primary
Contact Organization Primary
Hours of Service
Contact Instructions

5 Data Quality

5.1 Data Scale

This will be a multi-scale dataset

1:1200, 1:6000, 1:24000 Urban
1:6,000, 1:24,000, 1:48,000 Rural
1:24,000, 1:48,000, 1:100,000 Remote

5.2 Data Accuracy

	Urban			**Rural**			**Remote (ag/forestry)**		
	High	***Med***	***Low***	***High***	***Med***	***Low***	***High***	***Med***	***Low***
Spatial Accuracy	1 ft.	5 ft.	40 ft	5 ft	40 ft	50 ft	40 ft.	50 ft. 1	00 ft
Update Frequency	1 mos.	6 mos.	1 yr.	1 yr.	2 yrs.	3 yrs.	1 yr.	2 yrs.	5 yrs.
Attribute Completeness	95%	80%	70%	95%	80%	70%	N/A	N/A	N/A
Source Scale	1:1200	1:6000	1:24 K	1:6000	1:24 K	1:48 K	1:24K	1:48K	1:100K

6 Stewardship

Update Cycles

- Need decisions on best available data for each data layer and/or scale.
- Here data could be submitted to source agency when concatenating with tabular or spatial data. If this is acceptable this would reduce the need to concatenate data repeatedly with each update cycle.
- Also will need to define a regular update cycle for data. Many agencies have an annual update cycle based on budget cycle. Would this dictate framework update cycle? Yearly updates, quarterly?

7 Data Layers

7.1 Core Data Sets:

State Highway
Highway Ramps – WSDOT naming convention
Milepost
Scenic Roads - attribute
Local Roads
Tribal Road Designators
Non-Motorized Transportation Modes
Railroads
Port Facilities
Ferry Transit Routes – include ferry terminal locations, includes staging areas as segments and connector roads
Aviation – includes airport locations, connector roads and runway segments

7.2 Reference (Boundary) Datasets:

County Boundaries
Reservation Boundaries
City boundaries – too dynamic?

7.3 Supporting Datasets:

CRIS Data – Core attribution
Survey Data – Core attribution
Bridges, culverts – attribute (event), eventually BEarms for bridge

7.4 Interfaces

Mobility
Geospatial One-stop

8 References

This standard was …

All Roads (HARP), ODT, Watterson and Brady, 2003 v5 draft
ANSIT, Geographic Information Framework-Data Content Standards for Transportation Networks: Roads
Oregon Road Centerline Standard, ODT, V.2, 2003 draft
Michigan Framework – web
http://www.michigan.gov/cgi/0,1607,7-158-12759_14194---,00.html
Arizona Framework – web
Dueker white paper
King Co Standards
http://www.metrogis.org/data/standards/address_guidelines.shtml
Minnesota Data Standards
http://www.co.clay.mn.us/Depts/GIS/GISDStan.htm
[1] WAGIC Metadata
http://wagic.wa.gov/techstds2/wl_subsetv1.htm
Geospatial One Stop
http://www.geo-one-stop.gov/Standards/Base/index.html

These will need to be cited as necessary

Appendix B – WA-Trans Data Model

WA-Trans Data Model

Based on Oregon All Roads (HARP)

10/5/2004
Version 1.0 Draft

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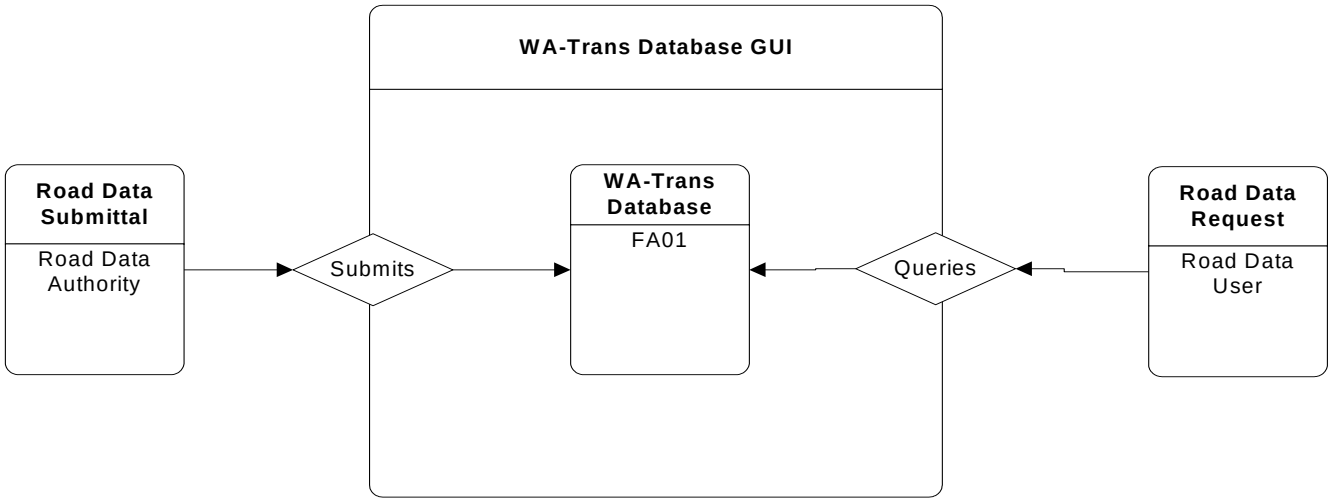
Definition of the Subject (150)

The WA-Trans Database stores statewide road centerline data. This data will be used by entities for transportation analysis. It is meant to be single GIS resource for all road centerlines in the state of Washington. The data is compiled from Federal, State, Local, Indian and Private road data providers. The data will go through necessary processes to adhere to the format requirements of the database. This data will be available to these same road data providers as a seamless network of roads that can be used to perform GIS analysis across jurisdictional boundaries. The database is GIS software independent and will accommodate data request regardless of GIS software. This database will minimize cost, time and effort to continually swap data between organizations, which normally required significant time and money to convert one data set to another's format, projection, or software type.

Diagram of the Subject



Definition of the Facet (170)

The WA-Trans Database contains the basic information needed to provide GIS analysis on roads. The facet contains 21 entities, which are briefly described as follows:

Entity: City
A view to an existing database that contains information about the city that has jurisdiction over a segment of road.

Entity County
A view to an existing database that contains information about the county that has jurisdiction over a segment of road.

Entity County City
Entity containing those data pertaining to multiple counties associated with multiple cities.

Entity Road Authority

Entity Horizontal Accuracy Measurement Method
Contains data pertaining to horizontal accuracy and measurement method of a road segment point.

Entity: Segment Point Agreement

Entity Length Accuracy Measurement Method
Contains data pertaining to the length accuracy and measurement method of a road segment.

Entity Road Segment Name
Contains data pertaining to the name of a road segment.

Entity Road Segment Name Prefix
Contains data pertaining to the prefix of the name of a road segment

Entity Road Segment Name Suffix
Contains data pertaining to the suffix of the name of a road segment.

Entity Road Segment Number
Contains data pertaining to alternate names on a segment of road.

Entity Segment
Contains data pertaining to a road segment..

Entity Segment Description
Contains data pertaining to road segments.

Entity Segment Name Prefix
Entity containing those data pertaining to multiple prefixes associated with multiple road segments.

Entity Segment Name Suffix
Entity containing those data pertaining to multiple suffixes associated with multiple road segments.

Entity Segment Point
Contains data pertaining to road segment points. (FW-FTRP, T-FIT-Node).

Entity Segment Description Road Segment Name
Entity containing those data pertaining to multiple names associated with multiple road segments.

Entity Segment Description Road Segment Number
Entity containing those data pertaining to multiple alternate names associated with multiple road segments.

Entity Segment Surface Type
Entity containing those data pertaining to surface type of road segments in whole or in part.

Entity State
Contains information about the states.

Entity State County
Entity containing those data pertaining to multiple counties associated with multiple states.

Diagram of the Facet

The Logical data structure appears on pages 21 - 23.

Definition of Entities & Attributes (180 - 320)

Entity City

Description

A view to an existing database that contains information about the city that has jurisdiction over a segment of road.

Attribute list

Name	Code	Data Type	Length	Precision
City Name	CITY_NM	VA30	30	
FIPS City Identifier	FIPS_CITY_ID	A5	5	

FIPS City Identifier

The official Federal Information Processing Standard identifier, for the particular city, that has jurisdiction over a segment of road.

City Name

The name of the city that has jurisdiction over a segment of road.

Entity County

Description

A view to an existing database that contains information about the county that has jurisdiction over a segment of road.

Attribute list

Name	Code	Data Type	Length	Precision
County Name	CNTY_NM	VA18	18	
FIPS County Identifier	FIPS_CNTY_ID	A3	3	

FIPS County Identifier

The official Federal Information Processing Standard identifier, for the particular county, that has jurisdiction over a segment of road.

County Name

The name of the county that has jurisdiction over a segment of road.

Entity County City

Description

Entity containing those data pertaining to multiple counties associated with multiple cities.

Entity Horizontal Accuracy Measurement Method

Description

Contains data pertaining to horizontal accuracy and measurement method of a road segment point.

Attribute list

Name	Code	Data Type	Length	Precisi

				on
Horizontal Accuracy Measurement Method Code	HRZ_ACCRCY_MEAS_METH_CD	A3	3	
Horizontal Accuracy Measurement Method Code Description	HRZ_ACCRCY_MEAS_METH_CD_DESC	VA50	50	
Horizontal Accuracy Measurement Method Datum Description	HRZ_ACCRCY_MEAS_METH_DATUM_DESC	VA255	255	
Horizontal Accuracy Measurement Method Projection Description	HRZ_ACCRCY_MEAS_METH_PROJCTN_DESC	VA255	255	

Horizontal Accuracy Measurement Method Code

A three character code which describes the derivation of the horizontal position and which allows the user to assess the accuracy and precision of the point latitude and longitude. (FW-Horizontal-Accuracy-Measurement-Method).

Horizontal Accuracy Measurement Method Code Description

Narrative description of the three character code which describes the derivation of the horizontal position and which allows the user to assess the accuracy and precision of the point latitude and longitude. (FW-Horizontal-Accuracy-Measurement-Method).

Horizontal Accuracy Measurement Method Datum Description

Horizontal Accuracy Measurement Method Projection Description

Entity Length Accuracy Measurement Method

Description

Contains data pertaining to the length accuracy and measurement method of a road segment.

Attribute list

Name	Code	Data Type	Length	Precision
Length Accuracy Measurement Method Code	LEN_ACCRCY_MEAS_METH_CD	A3	3	
Length Accuracy Measurement Method Code Description	LEN_ACCRCY_MEAS_METH_CD_DESC	VA50	50	

Length Accuracy Measurement Method Code

A three character code which describes the derivation of the length measurement and which allows the user to assess the accuracy and precision of the road segment length. (FW-Length-Accuracy-Measurement-Method).

Length Accuracy Measurement Method Code Description

A narrative description of the three character code which describes the derivation of the length measurement and which allows the user to assess the accuracy and precision of the road segment length. (FW-Horizontal-Accuracy-Measurement-Method, IRICC-Measure Method).

Entity Road Authority

Attribute list

Name	Code	Data Type	Length	Precision
Road Authority Identifier	RD_AUTHY_ID	VA3	3	
Road Authority Level Description	RD_AUTHY_LVL_DESC	VA300	300	
Road Authority Name	RD_AUTHY_NM	VA50	50	

Road Authority Identifier

Road Authority Name

Road Authority Level Description

Entity Road Segment Name

Description

Contains data pertaining to the name of a road segment.

Attribute list

Name	Code	Data Type	Length	Precision
Road Segment Name	RD_SEG_NM	VA50	50	
Road Segment Name Identifier	RD_SEG_NM_ID	NO		

Road Segment Name Identifier

Unique system generated integer that identifies a road segment name.

Road Segment Name

Road segment name, which has been assigned by the manager of the road segment.

Entity Road Segment Name Prefix

Description

Contains data pertaining to the prefix of the name of a road segment.

Attribute list

Name	Code	Data Type	Length	Precision
Road Segment Name Prefix	RD_SEG_NM_PFX	VA15	15	
Road Segment Name Prefix Identifier	RD_SEG_NM_PFX_ID	NO		

Road Segment Name Prefix Identifier

Unique identifier assigned to Road Segment Name Prefix.
Road Segment Name Prefix

Road segment name prefix, which has been assigned by the manager of the road segment.
Entity Road Segment Name Suffix
Description
Contains data pertaining to the suffix of the name of a road segment.
Attribute list

Name	Code	Data Type	Length	Precision
Road Segment Name Suffix	RD_SEG_NM_SFX	VA15	15	
Road Segment Name Suffix Identifier	RD_SEG_NM_SFX_ID	NO		

Road Segment Name Suffix Identifier

Unique identifier assigned to Road Segment Name Suffix.
Road Segment Name Suffix

Road segment name suffix, which has been assigned by the manager of the road segment.
Entity Road Segment Number
Description
Contains data pertaining to alternate names on a segment of road.
Attribute list

Name	Code	Data Type	Length	Precision
Road Segment Number	RD_SEG_NO	VA15	15	
Road Segment Number Identifier	RD_SEG_NO_ID	NO		

Road Segment Number Identifier

Unique identifier assigned to alternate road name.
Road Segment Number

An alternate number assigned to a road segment.
Entity Segment
Description
Contains data pertaining to a road segment.
Attribute list

Name	Code	Data Type	Length	Precision
Segment Create Date	SEG_CREATE_DT	D		
Segment Geometry	SEG_GEOM	LBIN		
Segment Identifier	SEG_ID	NO		
Segment Length Number	SEG_LEN_NO	DC9,2	9	2
Segment Local Identifier	SEG_LOCL_ID	VA9	9	
Segment Object Code	SEG_OBJ_CD	A1	1	
Segment Retire Date	SEG_RTIR_DT	D		
Segment Status Code	SEG_STAT_CD	A1	1	
Segment Transport Mode Code	SEG_TRANSP_MODE_CD	VA2	2	
Segment Update Date	SEG_UD_DT	D		
Segment Validate Date	SEG_VALIDT_DT	D		

Segment Identifier

Unique identifier assigned to Road Segment that relates the surface type to the road segment.

Segment Local Identifier

Identifier assigned to Road Segment by Road Data Contributor.

Segment Transport Mode Code

Object code indicating the mode of transportation permitted on the segment.

Segment Create Date

Date assigned to Road Segment that indicates the date that road segment data was created.

Segment Update Date

Date assigned to Road Segment that indicates the date that road segment data was updated.

Segment Validate Date

Date assigned to Road Segment that indicates the date that road segment data was validated (verified).

Segment Retire Date

Date assigned to Road Segment that indicates the date that road segment data was retired.

Segment Status Code

Status code indicating whether a road segment is active, proposed or retired.

Segment Object Code

Object code indicating that a particular piece of data is a segment. (FW-part of Trans.

Segment ID).

Segment Length Number

Road segment length number calculated at the WA-Trans database level.

Segment Geometry

Road segment geometry cataloged by WA-Trans software, stored in a binary (BLOB) format that describes the road segment.

Entity Segment Description

Description

Entity which contains descriptive data pertaining to road segments.

Attribute list

Name	Code	Data Type	Length	Precision
Segment Description Local Identifier	SEG_DESC_LOCL_ID	VA9	9	
Segment Description Begin Milepoint	SEG_DESC_BEG_MP	DC5,2	5	2
Segment Description Create Date	SEG_DESC_CREATE_DT	D		
Segment Description End Milepoint	SEG_DESC_END_MP	DC5,2	5	2
Segment Description Identifier	SEG_DESC_ID	NO		
Segment Description Left High Address	SEG_DESC_L_HIGH_ADDR	VA10	10	
Segment Description Left Low Address	SEG_DESC_L_LOW_ADDR	VA10	10	
Segment Description Left Zip Code	SEG_DESC_L_ZIP_CD	VA10	10	
Segment Description Local Length Number	SEG_DESC_LOCL_LEN_NO	DC9,2	9	2
Segment Description Retire Date	SEG_DESC_RTIR_DT	D		
Segment Description Right High Address	SEG_DESC_R_HIGH_ADDR	VA10	10	
Segment Description Right Low Address	SEG_DESC_R_LOW_ADDR	VA10	10	
Segment Description Right Zip Code	SEG_DESC_R_ZIP_CD	VA10	10	
Segment Description Status Code	SEG_DESC_STAT_CD	A1	1	
Segment Description Update Date	SEG_DESC_UD_DT	D		

Segment Description Validation Date	SEG_DESC_VALIDT_DT	D		
Segment Local Functional Class Code	SEG_LOCL_FC_CD	VA2	2	
Segment Local LRS Description	SEG_LOCL_LRS_DESC	VA25	25	
Segment Path Description	SEG_PATH_DESC	VA255	255	

Segment Description Identifier

Unique identifier assigned to Road Segment Description.

Segment Description Local Identifier

Identifier assigned to Road Segment Description by Road Data Contributor (if applicable).

Segment Local LRS Description

Segment Path Description

Description assigned to road segment by Road Authority that describes circumstances regarding road segment.

Segment Description Create Date

Date assigned to Road Segment Description that indicates the date that road segment data was created.

Segment Description Update Date

Date assigned to Road Segment Description that indicates the date that road segment data was updated.

Segment Description Validation Date

Date assigned to Road Segment Description that indicates the date that road segment data was validated (verified).

Segment Description Retire Date

Date assigned to Road Segment Description that indicates the date that road segment data was retired.

Segment Description Status Code

The code that indicates if a segment is active, proposed or retired.

Segment Description Local Length Number

A measured length of a segment described by the Length Accuracy Measurement Method Code (FW-Length, T-FIT-Length).

Segment Local Functional Class Code

Functional class code associated with Road Segment Description by Road Data Contributor.

Segment Description Begin Milepoint

Milepoint describing the beginning of a road segment as it relates to the Road segment description, assigned by the Road Data Contributor.

Segment Description End Milepoint

Milepoint describing the ending of a road segment as it relates to the Road segment description, assigned by the Road Data Contributor.

Segment Description Left Low Address

Describes the left low address of a road segment as it relates to the Road segment description, assigned by the Road Data Contributor.

Segment Description Right Low Address

Describes the right low address of a road segment as it relates to the Road segment description, assigned by the Road Data Contributor.

Segment Description Left High Address

Describes the left high address of a road segment as it relates to the Road segment description, assigned by the Road Data Contributor.

Segment Description Right High Address

Describes the right high address of a road segment as it relates to the Road segment description, assigned by the Road Data Contributor.

Segment Description Left Zip Code

Describes the left zip code of a road segment as it relates to the Road segment description, assigned by the Road Data Contributor.

Segment Description Right Zip Code

Describes the right zip code of a road segment as it relates to the Road segment description, assigned by the Road Data Contributor.

Entity Segment Description Road Segment Name

Description

Entity containing those data pertaining to multiple names associated with multiple road segments.

Entity Segment Description Road Segment Number

Description

Entity containing those data pertaining to multiple alternate names associated with multiple road segments.

Entity Segment Name Prefix

Description

Entity containing those data pertaining to multiple prefixes associated with multiple road segments.

Entity Segment Name Suffix

Description

Entity containing those data pertaining to multiple suffixes associated with multiple road segments.

Entity Segment Point

Description

Contains data pertaining to road segment points. (FW-FTRP)

Attribute list

Name	Code	Data Type	Length	Precision
Segment Point Agreement Indicator	SEG_PT_AGREE_IND	A1	1	
Segment Point Create Date	SEG_PT_CREATE_DATE	D		
Segment Point Identifier	SEG_PT_ID	NO		
Segment Point Latitude Number	SEG_PT_LAT_NO	DC10,6	10	6
Segment Point Local Identifier	SEG_PT_LOCL_ID	VA9	9	
Segment Point Location Description	SEG_PT_LOC_DESC	VA255	255	
Segment Point Longitude Number	SEG_PT_LONGTD_NO	DC10,6	10	6
Segment Point Object Code	SEG_PT_OBJ_CD	A1	1	
Segment Point Retire Date	SEG_PT_RTIR_DATE	D		
Segment Point Status Code	SEG_PT_STAT_CODE	A1	1	
Segment Point Update Date	SEG_PT_UD_DT	D		
Segment Point Validation Date	SEG_PT_VALIDT_DT	D		

Segment Point Identifier

Unique identifier assigned to Road Segment Point.

Segment Point Agreement Indicator

Segment Point Object Code

Object code indicating that a particular piece of data is a point. (FW-part of Trans. Point ID).

Segment Point Local Identifier

Identifier assigned to Road Segment Point by Road Data Contributor (if applicable).

Segment Point Location Description

An unambiguous description of the road segment point, which makes it field recoverable. (FW-Location Description).

Segment Point Status Code

The code that indicates if a road segment point is active, proposed or retired. (FW-Status).

Segment Point Latitude Number

The angular distance measured on a meridian north or south from the equator of the road segment point (NAD83). (FW-Latitude).

Segment Point Longitude Number

The angular distance between the plane of a meridian east or west from the plane of the prime meridian of the roads segment point (NAD83). (FW-Longitude).

Segment Point Create Date

Date assigned to Road Segment Point that indicates the date that road segment point data was created.

Segment Point Update Date

Date assigned to Road Segment Point that indicates the date that road segment point data was updated.

Segment Point Validation Date

Date assigned to Road Segment Point that indicates the date that road segment point data was validated (verified).

Segment Point Retire Date

Date assigned to Road Segment Point that indicates the date that road segment point data was retired.

Entity Segment Point Agreement

Attribute list

Name	Code	Data Type	Length	Precision
Segment Point Agreement Document Description	SEG_PT_AGREE_DOC_DESC	VA255	255	
Segment Point Agreement Survey Description	SEG_PT_AGREE_SRVY_DESC	VA255	255	

Segment Point Agreement Document Description

Segment Point Agreement Survey Description

Entity Segment Surface Type

Description
Entity containing those data pertaining to surface type of road segments in whole or in part.
Attribute list

Name	Code	Data Type	Length	Precision
Segment Identifier	SEG_ID	NO		
Segment Surface Type Code	SEG_SURF_TYP_CD	A1	1	
Surface Begin Milepoint Number	SURF_BEG_MP_NO	DC6,3	6	3
Surface End Milepoint Number	SURF_END_MP_NO	DC6,3	6	3
Surface Left High Address	SURF_L_HIGH_ADDR	VA10	10	
Surface Left Low Address	SURF_L_LOW_ADDR	VA10	10	
Surface Right High Address	SURF_R_HIGH_ADDR	VA10	10	
Surface Right Low Address	SURF_R_LOW_ADDR	VA10	10	

Segment Identifier

Unique identifier assigned to Road Segment that relates the surface type to the road segment.
Segment Surface Type Code

Code that indicates surface type of a road segment.
Surface Begin Milepoint Number

Milepoint number that is coincident with the beginning position of a particular surface type.
Surface End Milepoint Number

Milepoint number that is coincident with the ending position of a particular surface type.
Surface Left Low Address

Left low address number that is coincident with the beginning position of a particular surface type.
Surface Right Low Address

Right low address number that is coincident with the beginning position of a particular surface type.
Surface Left High Address

Left low address number that is coincident with the ending position of a particular surface type.

Surface Right High Address

Right low address number that is coincident with the ending position of a particular surface type.

Entity State

Description

Contains information about the states.

Attribute list

Name	Code	Data Type	Length	Precision
FIPS State Identifier	FIPS_STATE_ID	VA2	2	
State Name	STATE_NM	VA30	30	

FIPS State Identifier

Federal Information Processing Standard number assigned to a specific state.

State Name

Official name of a specific state.

Entity State County

Description

Entity containing those data pertaining to multiple counties associated with multiple states.

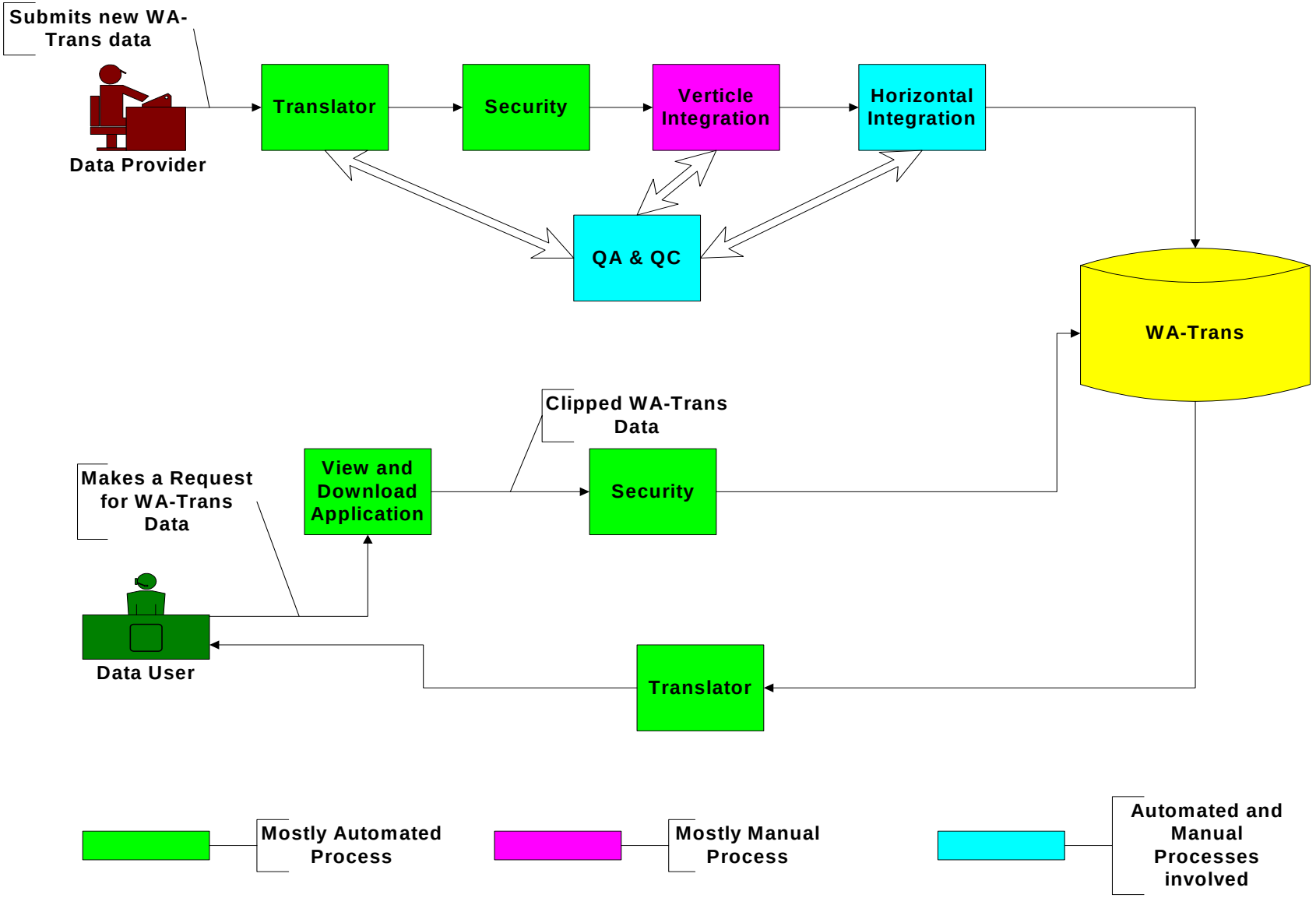
Definition of Relationships (190)

Relationship list

Entity 1	Entity 2 -> Entity 1 Role	Entity 2 -> Entity 1 Role Cardinality	Entity 1 -> Entity 2 Role Cardinality	Entity 1 -> Entity 2 Role	Entity 2
County	contains	1,n	1,1	associates	County City
County City	associates	1,1	1,n	may be in	City
Horizontal Accuracy Measurement Method	applies to	0,n	1,1	uses	Segment
Horizontal Accuracy Measurement Method	applies to	0,n	1,1	uses	Segment Point
Length Accuracy Measurement Method	applies to	0,n	1,1	uses	Segment Description
Road Authority	manages	1,n	1,1	managed by	Segment
Road Authority	originates	1,n	1,1	originated by	Segment
Road Authority	originates	1,n	1,1	originated by	Segment Description
Road Authority	originates	1,n	1,1	originated by	Segment Point
Road Authority	owns	1,n	1,1	owned by	Segment
Road Authority	updates	0,n	1,1	updated by	Segment
Road Authority	updates	0,n	1,1	updated by	Segment Description
Road Authority	updates	0,n	1,1	updated by	Segment Point
Road Segment Name	has	0,n	1,1	associates	Segment Name Prefix
Road Segment	has	0,n	1,1	associates	Segment Name Suffix

Name					
Segment	has	1,n	1,1	applies to	Segment Description
Segment Description	has	0,n	1,1	associates	Segment Description Road Segment Number
Segment Description	has	1,n	1,1	associates	Segment Description Road Segment Name
Segment Description Road Segment Name	associates	1,1	1,n	applies to	Road Segment Name
Segment Description Road Segment Number	associates	1,1	1,n	applies to	Road Segment Number
Segment Name Prefix	associates	1,1	0,n	applies to	Road Segment Name Prefix
Segment Name Suffix	associates	1,1	0,n	applies to	Road Segment Name Suffix
Segment Point	applies to	1,n	1,1	has a FROM	Segment Description
Segment Point	applies to	1,n	1,1	has a TO	Segment Description
Segment Point	may have	0,n	1,1	applies to	Segment Point Agreement
State	contains	1,n	1,1	is within	Segment
State	contains	1,n	1,1	is within	Segment Point
State	has	1,n	1,1	associates	State County
State County	associates	1,1	1,n	can be in	County

Appendix B – WA-Trans Conceptual Architecture



WA-Trans Partner Meeting Notes
March 2, 2004

Attendees:

Participant	Association	Location Attended
Jim Shambaugh	WSDOT Aviation Division	Olympia
Dave Hawley	FHWA	Olympia
Debra Naslund	WA Dept. of Natural Resources	Olympia
Mark Finch	WSDOT Transportation Data Office	Olympia
Michelle Blake	WSDOT GIS Data Steward	Olympia
Ron Cihon	WSDOT Geographic Services	Olympia
David Cullom	Utilities & Transportation Commission	Olympia
Kevin Maxfield	Kitsap County	Olympia
Kellie Kvasnikoff	Snoqualmie Tribe	Olympia
Suzanne Ventura	Snoqualmie Tribe	Olympia
Terry Bartlett	Marshall	Olympia
Jeff Holm	WA DIS	Olympia
Robin Phillips	WSDOT Public Transportation and Rail Office	Olympia
Gordon Kennedy	WSDOT Office of Information Technology	Olympia
Wendy Hawley	US Bureau of Census	Olympia
Lynne Gross	Grant County GIS	Olympia
Sam Bardelson	USGS	Olympia
Ed Arabus	Oregon Framework Coordinator	Vancouver
Steve Rush	Hanford (US Dept. of Energy)	Yakima

Facilitator and Note Taker: Tami Griffin

Agenda:

- Introductions
- Project Status and Activities Update
- Standards
- Architecture
- Funding Initiatives
- Next Steps
- Related Efforts – The National Map Puget Sound Implementation
- Related Efforts – US Bureau of Census TIGER/MAF Accuracy Improvement Project
- Action Item Review

Project Status and Activities Update: (Tami)

Tami presented a PowerPoint presentation for this report. This presentation will be placed on the project website. Highlights include:

Next Meeting – September 7, 2004 from 9 a.m. – noon at the Transportation Building, 310 Maple Park Ave. SE in Olympia. Video-conferencing will be available from WSDOT Regional Offices in Shoreline, Vancouver, Yakima, Wenatchee, and Spokane.

New partners include: The Cities of Auburn and Milton, Indian Health Services and The Snoqualmie Tribe. The Snoqualmie Tribe is not yet official partners, but is interested in participation.

Various presentation about WA-Trans have been made:

- Presentation at the NW Tribal GIS Users Group meeting in Tulalip,
- GIS Day display at WSDOT HQ

- Presentation to UW Extension GIS Certification Course
- Presentation on partnership planned for WA-URISA in April with USGS and US Census Bureau.

Steering Committee activities include:

- Establishing standards,
- Developing high level architecture,
- Public access to data policy for WA-Trans
- Pilot preparation plans including communication plans, and pilot questionnaires for participants.
- Scoping pilots:
    - Island county added to Puget sound pilot
    - Looking at adding Dept. of Social Health Services geocoding to the pilot
    - Oregon Washington Pilot has changed scope.
        - Phase I includes Benton & Walla Walla Counties in Washington and Morrow and Umatilla Counties in Oregon,
        - Phase I include development of the translator and front ends for downloading and viewing,
        - Phase II includes Clark and Cowlitz Counties in Washingotn and Columbia and Multinomah Counties in Oregon,
        - Phase II includes development of utilities to support integration and QA/QC and security.
        - This pilot is focused on research and software development based upon the funding source.

Data Model

A decision was made some time ago to use the Oregon All-Roads data model. The model must be extended to be multi-modal. A meeting was held November 3 in Portland with representatives from aviation, ferries rail and freight and WSDOT Office of Information technology and the Oregon people to go over the existing model concepts and gather information for extending the model.

The model is a point and segment model. Where two different jurisdictions segments meet is an agreement point (also called a Dueker). Ed Arabus pointed out that what Washington is calling a Dueker is not the same as Oregon. Oregon considers a Dueker as connectivity created by the framework data steward temporarily in place of an agreement point and agreement.

There was some discussion of the way we will identify road segments. Oregon uses a 3-part code for a segment ID.
S – Segment
P – Point
State Road Authority Component – FIPS (2 digit state code)
9-character local identifier may need to be bigger
Local code becomes a piece of the framework data layer code.

The model has been modified to handle multiple mode codes. Other changes have also been made. Another meeting will be scheduled with the original participants to go over the changes and make sure they are enough and will work.

Standards

Several decisions regarding standards have been made:

- Meta data – ISB Standards – subset of FGDC meta data standards. See http://www.dis.wa.gov/portfolio/
- Standards for Horizontal Datum and Coordinate Systems – ISB Standards, see http://www.dis.wa.gov/portfolio/
- LRS – Route/Milepost, address Range, Distance from intersection (implicit)
- Addressing Scheme – based on Oregon data model
- Archiving – annually with versioning
- Accuracy Standards – Targets set. See Appendix A of these notes.
- Core Attribution is under development.

Action Item - Jeff Holm identified that the SWIM project is working on data exchange guidelines that might be useful and he will send them to Tami.

Architecture
The following software utilities will be developed to support WA-Trans. High-level specifications are under development for all:

- Data Translator – Used to translate attribution, projection and coordinate system both into and out of WA-Trans. Appendix B
- Data Viewing and Downloading – Appendix C
- Integration Software – anticipated to mostly be used for edge matching and possibly conflation.

See Appendix D for Conceptual Architecture.

Kevin Maxfield expressed the opinion that developing a translator is not going to be easy and we may need to involve a private company. This can be done based on the type of funding we are pursuing.

Funding
The following requests for funding are being pursued:

- Applying for federal earmark (Puget Sound Pilot),
- Applying for Pooled Research Funding (Oregon/Washington Pilot),
- Applying for state money as matching or to more slowly pursue reduced scope Puget Sound Pilot,

Asking partners to write letters of support on letterhead:

- Write “To Whom It May Concern:”
- Make it generic, explain why your organization is participating,
- Mail letters to:
    - Tami Griffin
      Washington State Department of Transportation
      Geographic Services
      PO Box 47384
      Olympia, WA 98504-7384
- Tami can provide examples of letters she already has and provide assistance.
- The sooner these are done the better!

Next Steps –
The following efforts are currently under way:

- Complete the Standards
- Identify Core Attribution
- Finalize Approval for the Data Model
- Complete Software Tools High Level Specifications
- Begin Pilots,
- Continue to seek funding.

Related Efforts – The National Map Puget Sound Implementation
Sam Bardelson introduced himself as the new Washington Liaison for the USGS and shared a presentation on The National Map. The presentation can be found at the WA-Trans website. An earlier effort was initiated but was not completed. Sam expects to re-engage this effort.

The USGS is using GDT to provide city street data right now. Some questions were asked about the experience of using GDT. Ed Arabus shared Oregon's experience when they looked at purchasing GDT data for the Office of Emergency Management. The biggest issue was that there was no guarantee of data accuracy, no guarantee data update cycle. They can't use it even on an interim basis. Dave Cullom also shared the WUTC experience with GDT. When they developed the data if it looked like a road it was digitized. The data doesn't identify gates, doesn't show roads a public or private. When they were using the data to navigate in rural areas they wasted a lot of time trying to figure out where they were going. Lynn Gross of Grant County shared that the county had a lot of problems with GDT. They decided to start over from scratch.

Related Efforts – US Bureau of Census TIGER/MAF Accuracy
Wendy Hawley of the US Bureau of Census shared a presentation on the MAF/TIGER Accuracy Improvement Project (MTAIP). They are to be done September 2008. They are building a national street centerline file. Individual addresses are protected and will not be available to the public, but address ranges will be provided.

The Census Bureau is working with counties and cities to establish legal agreements with them. They must have a 7.6-meter accuracy across the board but want to use local data as a reference when it isn't accurate enough. They are currently collecting street centerline, boundaries, hydrography, rail features; structure coordinates with building footprints, cadastral or tax parcels, legal boundaries.

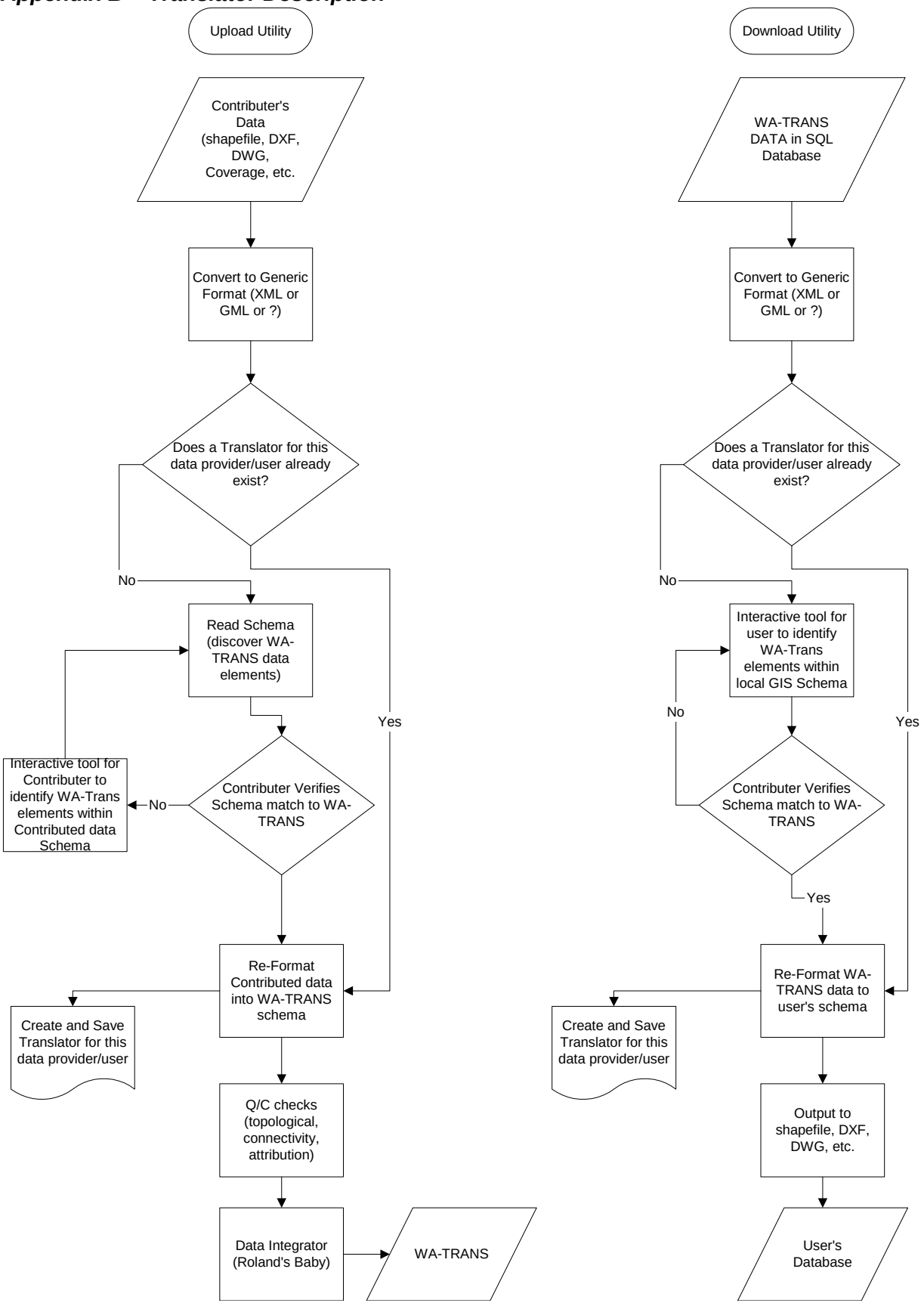
Wendy's presentation will be available on the WA-Trans website.

Appendix A – Accuracy Targets

Accuracy Standards

	Urban			Rural			Remote (ag/forestsry)		
Level of quality	High	Medium	Low	high	Medium	Low	High	Medium	Low
Spatial accuracy	+/- 1meter	+/-5meter	+/-10meter	+/-5meter	+/-10meter	+/-15meters	+/-10meter	+/-15meters	+/- 20meters
Update Frequency	1 year	3 year	5 year	3 year	5 year	10 year	5 year	10 year	15 year
Level of detail (atts/feature)	100	50	25	50	25	10	25	15	5
Linear accuracy (?)									
Source Scale (non GPS or surveyed data)	1:1000	1:10000	1:24000	1:10000	1:24000	1:50000	1:24000	1:50000	1:100000

Appendix B – Translator Description



Appendix C – Download and View
General

A web portal will be established to list the agency's core data sets as well as additional supportive layers for background and reference. Mapping functions will be available for both navigation and identification of data sets and layers.

Structure
The website will be composed of the following pages:

- Framework overview
- Web portal page
- Data Sets for Downloading
- Disclaimers/Release of liability to be read before accessing mapping and data sets for downloading
- Resource links for other framework and supporting data layer sets

Viewing
The following data sets are examples of what may be included in the interactive web page. Core Transportation layers and metadata files will be available for distribution through the web portal. Transportation Framework will provide links to the originating agency's website for downloading or accessing of data sets belonging to other agencies or entities. Metadata for those data sets would be the responsibility of the provider.

Core Data Sets

1. Federal
2. State Highway system
3. Highway Ramps
4. Mileposts
5. Rest Areas
6. Scenic Highways
7. Local Roads
8. Bridges
9. Railroads
10. Ferry Transit Routes
11. Aviation Routes
12. Priority Programming
13. Engineering and Maintenance Districts
14. Organization Boundaries

Reference Data Sets

1. County Boundaries
2. Urbanized Areas
3. Reservation boundaries

Additional Data Sets for Download/Access

1. Cris Data (Mobility?)
2. Survey Data

Map functions to be made available:

- Zoom in/out
- Full view
- Pan
- Search by:
    - Location (regional, county or city)
    - Identifiers (street names or intersections)
    - Jurisdictional agency (federal, state or local authority)
- Query Data
- Export Data by
    - Selection
    - Data set name
    - All Data Sets shown

Access for Download

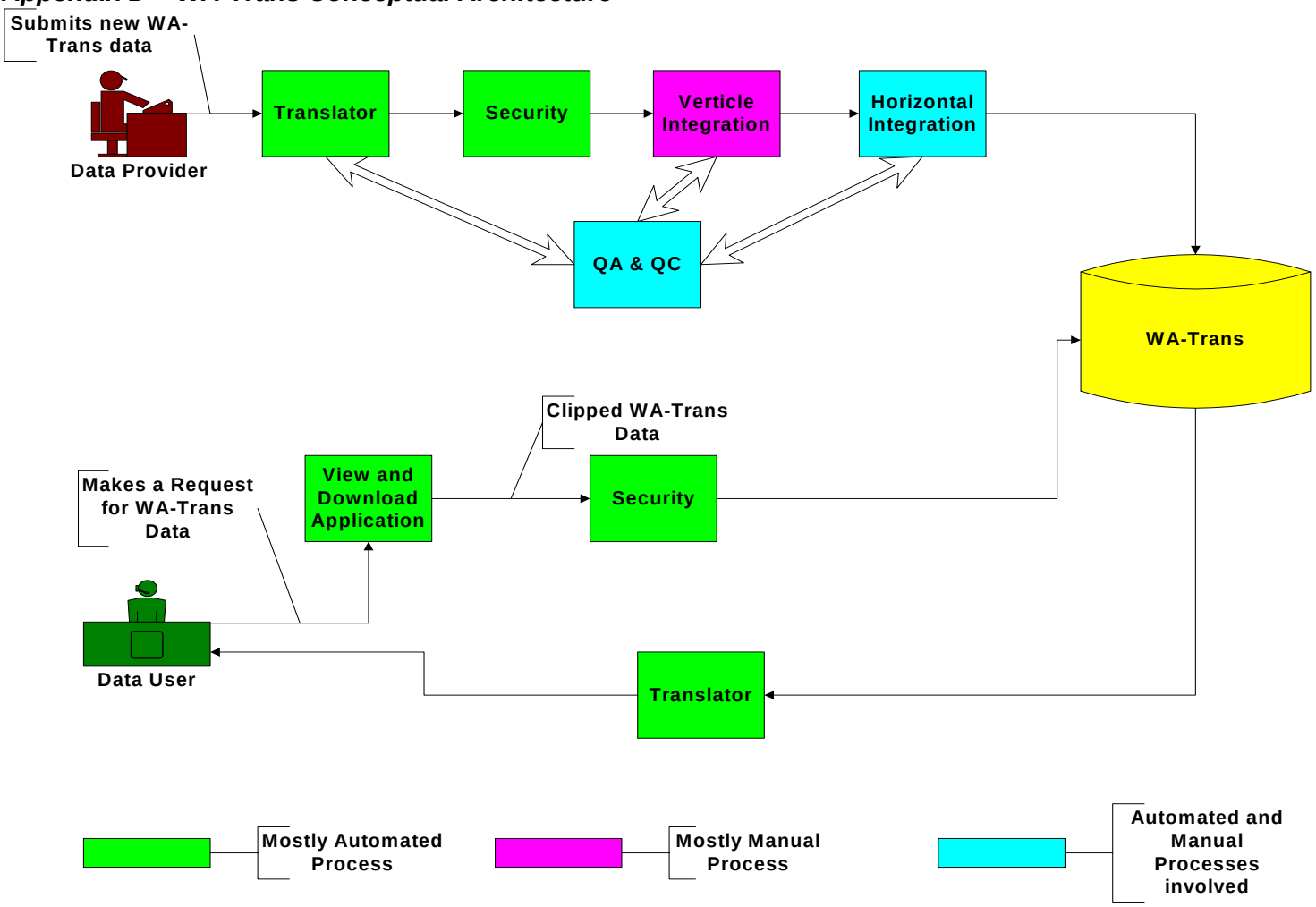
Download of the data will be available both through the web map page by selecting the data to be downloaded from the map or through a link to a web page that enables a direct download of the original data set. The second option will be a traditional resource page that lists the data sets available by description, format and location. Downloading complete data sets through a traditional access page in tabular format will provide services for clients that may not have adequate internet access to support access of the interactive web page. These data sets would be available based upon their geographic extents, e.g. by state, county or regionally significant areas.

Formats

Formats to be made available for Download/Access

1. Shape files, ArcGIS feature data sets for ArcSDE, .dxf or .dgn,
2. .MDB, Excel, DBF, .txt,
3. JPEG, TIFF, bmp or GIF
4. Projection- Washington State Plane South NAD 83 only. (.PRJ files to be provided with shape files)

Appendix D – WA-Trans Conceptual Architecture



WA-Trans Steering Committee Meeting Notes
September 16, 2003

Attendees:

Member	Association	Location Attended
Dave Leighow	FHWA	Olympia
Carl Harris	WA Dept. of Natural Resources	Olympia
Curtis Mack	Department of Social and Health Services	Olympia
Heather Jones	Department of Corrections	Olympia
Michelle Blake	WSDOT GIS Data Steward	Olympia
Lynne Gross	Grant County GIS	Olympia
Ron Sell	Grant County GIS	Olympia
Pat Whittaker	WSDOT Transportation Data Office	Olympia
Mark Finch	WSDOT Transportation Data Office	Olympia
Elizabeth Marshall	Marshall	Olympia
Kevin Maxfield	Kitsap County	Olympia
Art Shaffer	WSDOT NW Region	Shoreline
Anne Skoog	City of Monroe	Shoreline
Jim Carver	The Samish Tribe	Shoreline
Mike McKee	WSDOT NC Region	Wenatchee
Steve Rush	Hanford (US Dept. of Energy)	Yakima
Mary Phillips	Benton County	Yakima

Facilitator and Note Taker: Tami Griffin

Agenda:

- Introductions
- Project Status and Activities Update
- Data Model, Standards and Plans
- Pilot Project Proposals Status
- Pilot Project Plans WBS
- Hydrography Framework
- Conclusions

Introductions:

Dave Leighow from FHWA was introduced. Heather Jones from Department of Corrections and Curtis Mack from Department of Social and Health Services were introduced. Department of Corrections is working on a pilot for geocoding sex offender locations that DSHS was involved with. They have an interest in WA-Trans. Kevin Maxfield from Kitsap County was also introduced.

Project Status and Activities Update: (Tami)

Tami presented a PowerPoint presentation for this report. This presentation will be placed on the project website. Highlights include:

Various presentation about WA-Trans have been made:

- Tribal Transportation Symposium for the Tribal Technical Assistance Program in North Bend, Oregon.
- Statewide Information Coordination Consortium.
- Presentation to new executives of WSDOT Strategic Planning and Programming Section. Completing a WA-Trans Pilot Project is being proposed as a WSDOT Strategic Objective.
- Presenting to the NW Tribal GIS Users Group meeting later in the week.

Partner Meeting dates for this year:

- December 3 from 9 a.m. – noon.
-

The meetings will continue to be held at the Transportation Building at 310 Maple Park in Olympia in room 2F22. New meetings will be scheduled for next year. It is anticipated that only two meetings will be scheduled for next year.

Steering Committee Meetings will be held as follows:
- October 27 in Seattle,
- December 8 in Olympia.

All meetings are from 9 a.m. to 2 p.m. Location details are on the website.

New Partners:
- Lummi Nation,
- Grays Harbor County,
- Department of Corrections,
- Department of Social and Health Services,
- Upper Skagit Tribe*,
- Lower Ellwah Klallam Tribe*.

* - Participating but haven't agreed to partnership.

Meanwhile we have lost the participation of Lisa Stuebing, Carrie Wolfe and Dale Guenther. It is hoped that Mason County can be reengaged at a later time. Carrie Wolfe and Dale Guenther have changed jobs. However we hope to find a replacement for Dale. Carl Harris and Lynne Gross both indicated that they had contacts in the Forest Service.

We are looking for another less populated county from the west side to join the steering committee to replace Lisa. Please contact Tami if you are interested.

Data Model, Standards and Plans:

Puget Sound Regional Council conducted an evaluation of the Oregon All Roads Data Model, the IRICC Roads Data Standard and the Geospatial One-Stop Data Models. The data models were evaluated against the identified business needs for WA-Trans. The model either:
- Supported the business need,
- Did not address but can be supported with linked attribution,
- Did not address but can be done with overlays of other data sets,
- Did not address so extensions of the data model are needed,
- Blocks meeting the business need.

The evaluation was superficial. It did not include detailed checking, but was based on limited review. Based on this evaluation it was decided to use the Oregon All-Roads data model and expand the model to include the missing elements. These elements include:
- Railroads, Ferries, Aviation, Ports data, Freight data,
- LRM using distance from intersection,
- Explicit designation of Indian Reservation Roads.

After meeting with them, the Oregon representatives of their data model agreed to partner with Washington to modify the data model to work for both states. A group is being put together to meet to do this. We are still looking for participation and expertise in: railroad data, ferries data, freight data, ports data, and aviation data. The data modeler from ODOT will actually perform the modeling work.

Regarding standards the steering committee is working hard to develop a starting set of standards that will be used in pilots. It is anticipated that pilots may lead to some changes, but the standards are targeted to

provide a statewide implementation perspective for the pilots to adhere to. More on standards in the pilot planning work breakdown structure (WBS) to follow.

Pilot Project Proposals Status:

Two separate pilot projects are being considered at this time. Detailed information was provided about each. They are:

1. Sound Transit, Puget Sound Regional Council, National Map Pilot:
    a. This pilot would be for Snohomish, King, Pierce and Kitsap Counties.
    b. It would test data integration, data model, use of local data by federal agencies, transit related business needs, regional planning related business needs.
    c. Waiting for data model and standards to move forward.
    d. We have received some idea of what Sound Transit may want to do with the data, which drives requirements and scope.
    e. PSRC needs less accurate data but a larger geographic area.
    f. Requires highly accurate centerline and addresses.
    g. Must be able to lay transit data on top.
    h. Requires rail data.
    i. Many more requirements to be gathered.
    j. Curtis Mack of DSHS proposed testing some geocoding as part of this pilot. He would be interested in geocoding day care locations in these counties.
2. Oregon/Washington pilot:
    a. Partnering with ODOT.
    b. Testing data integration across state lines,
    c. Data model,
    d. Rural data issues,
    e. Tribal data integration,
    f. Counties without data?
    g. Phase approach.
    h. Phase I – Walla Walla County Washington and Umatilla County Oregon and Umatilla Tribe and others. Software developed for viewing and downloading data and translation of data.
    i. Phase II – Benton and Columbia County Washington, and Willowa County Oregon with software developed for downloading data for maintenance, and quality assurance and quality control.
    j. Phase III – Garfield County, Asotin County Washington, and two Idaho counties. Software developed to facilitate integration of data and line work across borders and translation of addresses.
    k. We have a draft work breakdown structure and are working to get funding through Transportation Research Board pooled funding. We are meeting with the research directors from WSDOT and ODOT for further direction and guidance.

Pilot Project Plans WBS

A work breakdown structure (WBS) of tasks was developed to prepare for pilot projects. The steering committee has been developing high-level standards and requirements definition to fulfill the WBS. Please refer to the WBS that will be on the web site.

Hydrography Framework (Carl Harris)

Carl Harris, hydrography data steward from the WA Dept. of Natural Resources attended the meeting and gave a terrific presentation on the Washington Hydrography Framework effort. He used slides which will be put on the WA-Trans website.

Carl identified several areas of concern that WA-Trans might want to pay attention to.

- Lack of formal partnership agreements has cost hydro time and money. Changes of jobs, changes of directions and lost history contribute to this as well.
- The hydro framework project began in 1989 when the DNR began to have big problems with accountability. They had difficulty combining data to answer legislative questions.
- ESRI developed some key technology and they underestimated the cost significantly.
- Carl feels Carrie Wolfe's work on hydrography Roles and Responsibilities for data editing and maintenance is key.
- Hydrography selected representatives to participate in the FGDC hydrography standards development process.
- QA/QC on linear referenced data model has been extremely problematic. (Trans needs to pay close attention to this!).
- They are making significant progress but have a time constraint. They only have budget and staff through April. Currently they are on schedule.
- The data model is an issue. The project elected to go with the LLID model and federal agencies have been mandated to go the NHD model. The longer it takes to implement the more likely some other federal initiative will be developed.
- Carl recommended making data model as simple as possible.
- They are developing a lessons learned document.
- The accuracy of the product will be +/- 40 feet.

WA-Trans Steering Committee Meeting Notes
June 10, 2003

Attendees:

Member	Association	Location Attended
Jim Shambaugh	WSDOT Aviation Division	Olympia
Tony Hartrich	The Quinault Tribe	Olympia
Ken Reister	WA Dept. of Natural Resources	Olympia
Dave Wolfer	WA Dept. of Natural Resources	Olympia
Michelle Blake	WSDOT GIS Data Steward	Olympia
George Spencer	WSDOT Geographic Services Manager/WAGIC Chair	Olympia
David Cullom	Utilities & Transportation Commission	Olympia
Tami Goodwin	Green Crow	Olympia
Jennifer Coate	Weston Solutions	Olympia
Carrie Wolfe	Washington Framework Coordinator	Olympia
Terry Bartlett	Marshall	Olympia
Patricia Paul	The Tulalip Tribes	Shoreline
Terry Strandberg	The Tulalip Tribes	Shoreline
Jim Carver	The Samish Tribe	Shoreline
Wendy Hawley	US Bureau of Census	Shoreline
Lynne Gross	Grant County GIS	Wenatchee
Ron Sell	Grant County GIS	Wenatchee
Steve Rush	Hanford (US Dept. of Energy)	Yakima
Mary Phillips	Benton County	Yakima
Joe Bowles	Walla Walla County Surveyor	Yakima

Facilitator and Note Taker: Tami Griffin

Agenda:

- Introductions
- Project Status and Activities Update
- Licensing Issues
- Data and Data Models
- Pilot Objectives and Potential Pilot Projects
- Hydrography Framework
- Action Item Review

Introductions:

Patricia Paul of the Tulalip Tribes introduced Terry Strandberg as her alternate to the WA-Trans Steering Committee.

Project Status and Activities Update: (Tami)

Tami presented a PowerPoint presentation for this report. This presentation will be placed on the project website. Highlights include:

Various presentation about WA-Trans have been made:

- To the Statewide E-911 Coordinators and MSAG (Master Street Address Guide) Coordinators Conference in Spokane at the request of the Washington E-911 office.
- To the WSDOT Executives,

- Attended Affiliated Tribes of Northwest Indians (ATNI) Technical Conference and shared with several tribes and had a "booth" in the vendor fair,
- Presented about WA-Trans with WAGIC presentation on partnerships at the WA URISA conference in Tukwila,
- Attending and presenting on WA-Trans the Tribal Transportation Symposium in North Bend, Oregon directly after the meeting.

Partner Meeting dates have changed for the next two meeting this year. The new dates and times are:

- September 16 from 1 p.m. – 3 p.m.
- December 3 from 9 a.m. – noon.

Please update your calendars. The other partner meetings in September and December will not be held. All meetings will continue to be held at the Transportation Building at 310 Maple Park in Olympia in room 2F22.

Steering Committee Meetings will be held as follows:

- June 23 in Olympia,
- August 4 in Spokane,
- September 15 in Tacoma,
- October 27 in Seattle,
- December 8 in Olympia.

All meetings are from 9 a.m. to 2 p.m.

Other key news shared include:

- The efforts to determine if WA-Trans can use the Oregon data model, the GeoSpatial One-Stop data models or the IRICC standard. All will be evaluated based upon the business needs identified. The selected model will be extended to be multi-modal and then tested with pilots.
- Pilot project strategies and plans include urban pilots, rural pilots, pilots for jurisdictions with no data and cross-border pilots.
- Two specific pilots are being considered. The first is a partnership with Sound Transit, Puget Sound Regional Council and The National Map to test data integration, data model; use of local data by federal agencies, transit related business needs and regional planning related business needs. It would cover King, Pierce and Snohomish Counties and Kitsap, Thurston and Mason could be added. Work could begin on scoping this mid-summer.
- The second pilot would be done in partnership with Oregon State with Walla Walla County, Washington and Umatilla County, Oregon. We have to develop a proposal for the use of "pooled" research money for this pilot.

Tami and Carrie Wolfe shared about setting up a steering committee for The National Map, which would help coordinate activities so there is minimal duplication of effort with USGS. Information on the National Map can be found at: www.usgs.gov and a viewer can be seen at: http://nmviewogc.cr.usgs.gov/viewer.htm.

Wendy Hawley shared information about the TIGER/MAF update. They are currently doing an inventory. Wendy is passing that inventory on to Tami. They are targeting for a 7.6-meter accuracy in the centerlines across the board. This is not an average accuracy but an accuracy target in all areas. They are doing a county at and time. Wendy is doing a presentation at the

August WAGIC meeting regarding where they are in Washington on this process. They get files from counties and send them to HQ for QA/QC. They are targeting doing 208 counties in 2004. Wendy should have more information at the next meeting.

Licensing Issues (Carrie Wolfe):

Carrie discussed the various documents that were sent out. She explained the effort of the Framework Management Group to follow up. Key concerns in development of the Draft document on Collaborative Data Efforts and Associated Legal Issues include:

- Making sure data is access from an appropriate source.
- Retaining each partner's rights and interest in their own datasets (even though some portion of it may be provided to the Transportation Framework).
- Send comments on the document to Tami.
- Dave Rideout will add one additional section, but it is not complete yet.
- There are actually two legal documents needed. The first is a licensing document for making the data available to be used. The second is data sharing agreements.
- The Cadastral Framework had a web document that is a licensing agreement and disclaimer. They also had a partnership or data sharing agreement.
- The Hydrography Framework used a Memorandum of Understanding.

Data and Data Models (Tami)

Various information about potential data models was shared. The evaluation criterion was explained for determining which model is the best fit for WA-Trans. The models looked at include the Oregon "All Roads" model, the IRICC model and GeoSpatial One-Stop models. The Oregon model has the most potential but will need to be extended to be multi-modal. The GeoSpatial One-Stop has standards for Roads, Railroads, Transit, Airports, and Waterways. To get copies of the draft standards go to http://www.geo-one-stop.gov/Standards/Transportation/index.html.

Action Item: Send copies of the Oregon model to Ken Reister, Jim Carver, Dave Cullom, Jennifer Coate, Tony Hartrich, and Michelle Blake.

Pilot Objectives and Potential Pilot Projects (Tami)

The group discussed the WA-Trans Pilot Project Objectives draft dated June 2, 2003. The following was discussed:

- It was suggested that a "best case scenario" and a "worst case scenario" be examined. Tami included a pilot for a jurisdiction that has no data and no GIS and that is likely the worst-case scenario.
- It was suggested that the National Map Pilot for last year did examine data rich and data poor jurisdictions. We could learn from their lessons with Pend Orielle County.
- Grant County mentioned that they are going through a development process for their own roads project and wondered what standards and information we had to give them. We are not yet at a point to do so, but we can share what we have and Tami can visit them to see if there is more that can be done.
- Tami decided to add an introduction to the document to "frame" it.

Hydrography Framework (Carrie Wolfe)

Carrie discussed the hydro project in place of Carl Harris who was unable to attend. She recommended inviting Carl in the future as he has much more information.

Carrie shared information about how the hydro project is handling data stewardship and updating of the data. WA-Trans may be able to benefit from their experiences. The following highlights the information Carrie provided:

- There is a centralized component. That is the database, which resides in one location and the Regional Ecosystem Office is the administrator.
- The maintenance is distributed. There is a check-in and checkout process. The data steward checks the data out and uses tools provided by the framework to update the data and checks it back in. The data is then held in a special place and partners are notified of the changes and given time to make comments. Then the data goes through a mostly automated QA/QC process.
- Stewardship involves a lead steward and/or co-lead stewards assigned per each fifth field watershed. There is a document, which identifies roles and responsibilities.
- Copies are of this document and others are available at they hydro clearinghouse website. That is http:// hydro.reo.gov. Click on documentation and tools and select the roles and responsibilities document.
- The hydro project chose to do a memorandum of understanding. The project started small with signing agencies. It currently includes 6 core partners, both state and federal. The idea was to start small, get experience and then grow the partners.
- The clearinghouse should come on-line soon.
- There is a complete users guide. The project team broke the users guide up by chapters and let each partner take responsibility for drafting various chapters. The BLM did a great deal of work on this document and then hired a technical writer to consolidate. Carrie is very impressed with the users guide.
- Lessons learned on the data model were basic. KISS (Keep It Simple) applied. It turned out to be very difficult to convert data from one data model version to another and also convert software environments. Keep core framework as simple as possible.
- The business needs for trans and hydro are different and stewardship is different. For hydro it isn't as obvious who the most likely data steward is since water doesn't respect jurisdictional boundaries.
- The hydro process was kept simple. The USFS sponsored integration workshops to pick which initial hydro data to put in the framework by watershed unit. Hydro data still has to be integrated when there is a border between who was selected as the best provider.

  Comment: Patricia Paul of The Tulalip Tribes felt that on Tulalip land the tribe should be the initial data provider for anything regarding water. Carrie clarified that they want to incorporate tribal partners but kept is to a minimum number of partners to simplify the first implementation.
- There is not yet statewide framework data coverage for Washington. The DNR is still in the data conversion process. They have four Watershed Resource Inventory Areas (WRIA) completed and four more in process. A WRIA is defined as an administrative watershed boundary that the Dept. of Ecology has control over. Washington has 62 WRIAs.

Transportation Framework Partner Meeting
3-13-03

Attendees:

Member	Association
Nancy Tubbs	US Geological Survey Oregon Liaison
Wendy Hawley	US Census Bureau
Rosalind Philips	OSPI
Michael Burns	US Census Bureau
Daniel Bode	WA. Dept. of Natural Resources
Pat Whittaker	WSDOT Transportation Data Office
Michelle Blake	WSDOT
Martha Marrah	WSDOT Transportation Data Office
Lee Case	US Geological Survey
Jennifer Coate	Weston Solutions
Kim Beckwell	Thurston County
Joy Paulus	ESRI
Jacque Whaley	WSDOT Photogrammetry
Carrie Wolfe	Washington Framework Coordinator

Attending by Video Conference:

Member	Association
Joe Bowles	Walla Walla County Surveyor
Dale Guenther	Regional Ecosystem Office (REO)
Mary Phillips	Benton County
Ron Cubellis	Whatcom Council Of Governments
Angela Jacobs	Whatcom Council Of Governments

Project Status and Activities Update:

- Tami has been out recruiting new partners. New partners are: Whatcom COG, Benton County, Franklin County, US Bureau of Indian Affairs, Office of the Superintendent for Public Instruction, City of Pasco, Benton-Franklin Council of Governments, City of Kennewick, Green Crow Management Services, LLC, US Department of Energy (Hanford), and Quinault Indian Nation.
- Tami is in Spokane attending a meeting with E-911, Carrie will facilitate today's meeting.
- Carrie presented Steering Committee meeting highlights and gave the Partner Status presentation.

Future Activities:

- Tami will be making a presentation to Paula Hammond and the Executive Staff.
- Scoping pilot.
- Developing (or selecting) a data model.
- Developing interagency agreements to support pilot.
- Determining processes, utilities and maintenance plans to support pilot.

I-Plan Comments:

- Nancy commented that there is good information in the I-Plan and (in addition to it's intended purpose) it will be useful for new people to the project and to other states
- Joe Bowles commented that it was an excellent document
- Dale Guenther thought it was an excellent document too. In regards to the length, he suggested adding an Executive Summary
- Carrie emphasized that the I-Plan should be considered a "living document" and will change over time. Please review and send feedback to Tami.

Census TIGER/MAF Modernization Project:

Wendy Hawley gave an excellent presentation on the TIGER/MAF Modernization Project. It will be posted to the WA-Trans website at: http://www.wsdot.wa.gov/mapsdata/TransFramework/presentations.htm. The following are some highlights:

- Agreement that US Census Bureau will provide political boundaries and road layers for the National Map
- TIGER/MAF Enhancement Project is in production of first county of data.
- End product will be the same just more accurate data from partnerships (where available)
- MAF is not publicly distributed
- Enhanced TIGER data will be made publicly available, as each county is finished and ready. County data will also be edge matched to surrounding counties as they are completed.
- Census is not a funding provider agency. They can contribute in-kind services.

Available Data Discussion:

- Wendy has received approval to share some of their inventory information with state agencies (includes county info but not private companies). She has some follow-up work to do but cannot do it until she has the funding that will not likely come until mid-April. If the WA-Trans project team wanted to help do some of that follow up in the meanwhile, that could really help.
- Lee Case, from USGS, said that he would strongly recommend starting the available data search by doing an "inventory of the inventories" that have been done. Many others at the table agreed that this would be the best approach. Lee also indicated that he has a deadline as part of the National Map implementation to have the inventory work done by mid to late April.
- Some of the inventories that have been done and were suggested by partners include:
    - National Map
    - Census Bureau
    - PTI (Nancy mentioned but wasn't sure what it stood for)

    - SWIM Natural Resources Data Portal
    - Emergency Management, Camp Murray (Terry Eagan)
- Nancy suggested that partners could be contacted for available data information as a next step (after reviewing existing inventories).

Action Items:

- Wendy will bring the US Census Bureau GIS data inventory (sharable) attributes to the next Steering Committee Meeting
- Partners will review the Draft I-Plan and provide comments to Tami by March 27th if possible
- Wendy will add her contact information to the presentation she gave and send it to Tami and Jacque for posting on the web site (Dale Guenther specifically requested Wendy's contact information)
- Wrap up available data research by the end of April in order to coordinate with the National Map timelines (see notes below regarding available data discussion and input)
- Inform Tami that the Dec 11th partner meeting conflicts with the WAGIC meeting

WA-Trans Steering Committee Meeting Notes
September 30, 2002

Attendees:

Member	Association	Representing
Tareq Al-Zeer	WSDOT NW Region Maintenance and Operations	WSDOT
Anne Skoog	City of Monroe	City
Dale Guenther	Regional Ecosystem Office (REO)	IRICC
Dave Wolfer	WA Dept. of Natural Resources	Natural Resource Agency
Deb Naslund	WA Dept. of Natural Resources	Natural Resource Agency
Nancy Tubbs	US Geological Survey Oregon Liaison	USGS
David Cullom	Utilities & Transportation Commission	UTC
Jerry Harless	Puget Sound Regional Council	MPO's
Joe Bowles	Walla Walla County Surveyor	East side local government
Heath Bright	WSDOT	WSDOT
Lawrence Black	Private	Private
Jennifer Coate	Weston Solutions	Weston Solutions
Jim Carver	Samish Tribe	Samish Tribe
Lisa Stuebing	Mason County GIS Manager	West side local government
Dave Rideout	Spokane County Engineers GIS Manager	East side local government
Tami Griffin	WSDOT Geographic Services	WS-Trans (Project Manager), Facilitator
Carrie Wolfe	Washington Framework Coordinator	In role as Framework Coordinator
Jeff Holm	WA Dept. of Information Services	In role as WAGIC Coordinator

Agenda:
1. Introductions and Agenda Review
- Project Status and Activities Update
- Discuss Administrative Assistance
- Organize Grant Strike Team
- Risk Assessment Document
- GeoSpatial 1-Stop and RoadMAT Report
- National Map NW Update
- Action Item Check, Next Meeting

Project Status and Activities Update: (Tami)
- Good attendance at Steering Committee Meeting in September in Spokane.
- After the meeting Tami traveled to several eastern Washington counties and some tribal reservations to talk with them about the WA-Trans Project. All those she talked to were interested in a Partner role.
- Tami also wrote letters of invitation to Transportation Planners and Tribal Chairs requesting their participation. She has received very good responses back.
- New Steering Committee Members include:
    i. Joe Bowles from Walla Walla County
    ii. Blanchard Mat (?) from the Makah Tribe
    iii. Patricia Paul (?) from the Tullalip Tribe
    iv. Dave Wolfer from the WA DNR
- Scheduled 2003 Partner Meetings and Next 5 Steering Committee Meetings
    i. January 6, 2003 – Steering Committee Meeting

ii. February 17, 2003 – Steering Committee Meeting
iii. March 13, 2003 – Partner Meeting
iv. March 31, 2003 – Steering Committee Meeting
v. May 12, 2003 – Steering Committee Meeting
vi. June 10, 2003 – Partner Meeting
vii. June 23, 2003 – Steering Committee Meeting
viii. September 9, 2003 – Partner Meeting
ix. December 11, 2003 – Partner Meeting

- Current Steering Committee Activities
  i. Developed a strategy to proceed with requirements and specifications from the Business Needs Document (Tami showed a graphic diagram of the strategy)
  ii. Pierce County is developing a web application that will help the WA-Trans Steering Committee to prioritize business needs, identify required and available data to meet the business needs, track participation cost/time, and get standard reports on the information. They demo'd the application at the last Steering Committee meeting. They are working out a few bugs, and it should be ready soon. Tami reviewed the components of the web application and how it relates to the project workflow. Only Steering Committee members will input information on priorities and required data. A broader level of input may be needed at a later time. Pierce County will maintain the application. Tami will maintain the Partners information and Business Needs information. Project Partners will need to help with identifying available data.
  iii. The Draft Risk Assessment is under review and evaluation.
  iv. Business needs are continuing to be evaluated for gaps. Some of the gaps identified include business needs from the Military, Freight, Economic Data, Private Organizations. The gaps will be discussed and prioritized at the next SC meeting.
  v. Work is beginning on strategies for pilot work
- Project Work Plan - Phase 1 Work to Come
  i. Work will begin on the state Transportation I-Plan in January
  ii. Data model development will begin by looking at what already exists from various efforts
  iii. Start looking at maintenance plans and partner agreements
  iv. Seek legal opinions on data sharing and public disclosure issues (this may need escalation to the Framework Management Group)
  v. Cost/Benefit analysis
- Project Work Plan – Phase 2 = tasks associated with pilot work
- Project Work Plan – Phase 3 = Statewide Transportation Framework development
- Business Requirements and Specifications Process
  i. Business needs are defined by functionality needed to support them and the priority to participants
  ii. Data needed to support business needs are defined by source, accuracy, completeness, currency, and maybe more

Dave Wolfer indicated that the ability to edit the Transportation Framework is a business function required by the DNR.

- Communications Activities and Plan

i. Tami will be presenting WA-Trans at the upcoming MPO/RTPO/WSDOT Coordinating Committee Meeting
ii. She will be attending a meeting with the Port of Seattle
iii. She will be attending a meeting with the Military at the Emergency Operations Center
iv. Brochures and bookmarks have been developed for the project. They may work on a logo.
v. Tami is beginning to develop a formal Communications Plan
vi. New and improved web site complete

Action Item – Partners review new/improved project web site and provide Tami input and appropriate links

Discuss Administrative Assistant:

- Tami is still looking for funding assistance to hire a part-time Administrative Assistant. If several organizations contribute, the individual cost would be low.

Organize Grant Strike Team:

- Tami asked for assistance (4-6 volunteers) in forming a Grant Strike Team to seek funding opportunities for the project and help with the I-Plan development
- Lisa Stuebing will Lead the Team

Risk Assessment Document:

- Tami described the purpose and method for developing the draft Risk Assessment
- There was not enough time to review the document in much detail
- Tami asked if there were any questions /input

Dave Wolfer indicated that he felt it was a good method/approach. He also indicated that the funding issues should be elevated.

Action Item – Partners review Draft Risk Assessment and provide input to Tami either by phone, tracked changes, or in person meeting.

Geospatial 1-Stop and RoadMAT Report: (Lisa Stuebing)

- Lisa is a member of the RoadMAT that developed international data exchange standards for Road Data.
- She provided some background on the history of the effort and how it relates to NSDI initiatives.
- RoadMAT standards will be ANSI and ISO approved. ISO has already approved them and they are just waiting on the ANSI public review process.
- There are 2 key discussions occurring about the proposed RoadMAT exchange standards regarding the Road Authority ID (meaningful ID vs. system generated/non-meaningful ID) and feature level metadata to determine "equivalencies" based on various road-segmenting methods.
- The RoadMAT standards are software neutral and are only based on primitive (minimal) data elements and attributes.
- The standards don't exchange geometry or retired/historical road data.
- RoadMAT is in the lead for development of standards among the various Framework data themes.

- Lisa indicated that the challenge for Washington would be agreeing on anchor points for sharing geometry.

National Map NW Update: (Nancy Tubbs)

- Nancy reviewed the 8 data themes of focus for the National Map: ortho-imagery, elevation, geographic names, structures, hydrography, transportation, boundaries, and land cover.
- The FY02 pilot project in 4 county area eastern WA and western ID
- Original FY03 plan was to expand to 6 more counties
- Directive to re-scope pilot plans to focus on 133 Urban Areas identified by Homeland Security initiatives. Washington Urban Areas include; Spokane, Seattle/Tacoma, Olympia, Vancouver/Portland.
- Our NW USGS Team will be conducting data inventory for these areas to determine data collection needs.
- They will also continue to acquire and integrate data over the Spokane Urban Area as a continuation of the FY02 pilot.
- 6 county expansion postponed.
- State capital areas will only be completed as resources allow
- There will also be a separate FY03 pilot project to explore Structures data extraction software
- The re-scoping directive has also impacted the Dept. of Interior (DOI) High Priority Digital Data Program. Funding for the planned projects is suspended. It's not clear what the future of this program will be. The FY02 LIDAR data collection for the Toutle River Basin was flown in December.

Jerry Harless indicated it's important to make sure the National Map activities connect to the state Framework efforts. Maybe they will provide a pipeline for the future? He is planning to have a meeting with USGS representatives regarding the data inventory for the FY03 pilot and Tami may need to be involved. Nancy agreed and replied that the plan is to utilize State Framework data for the National Map updates in the future. Their pilot efforts should be aligned to help with Framework development.

Action Item Check & Next Meeting: (Tami)

Action Item – Need Grant Strike Team volunteers!

Next Partner Meeting is March 13, 2003

WA-Trans Partners Meeting
September 10, 2002

Attendees: Tareq Al-Zeer - WSDOT, Michelle Blake - WSDOT, Joe Bowles – Walla Walla County, Heath Bright – WSDOT, Larry Brotman – ESRI, Ron Cihon – WSDOT, Jennifer Coate – Weston Solutions, Rochelle Cole – Seattle Dept. of Transportation, Mark Finch – WSDOT, Holly Glaser – WSDOT, Jerry Harless – PSRC, Wendy Hawley – US Census Bureau, Deborah Reynolds – WUTC, Anne Willis - City of Monroe, Dave Rideout – Spokane County, Lisa Stuebing – Mason County, Pat Whittacker – WSDOT, Carrie Wolfe – WADNR

Facilitator: Tami Griffin

Agenda:
Introductions
Project Status and Activities Update
National Map Pilot Update
New National Map Initiatives
BTS Geospatial One-Stop Effort
Oregon T-FIT Data Model
Charter Update
Business Needs Document Draft
Follow-up Last Meetings Action Items
Meeting Review and Evaluation
Next Meeting Agenda Ideas

After introductions Tami gave a detailed status report of activities of the project. The slides from the presentation will be on our web site at www.wsdot.wa.gov/mapsdata/transframework/default.htm. She had a list of several new partners that have joined the effort since the last meeting. There is still a need for two members to be added to the steering committee. One from Dept. of Natural Resources, and the other from east side local government.

There was great deal to report regarding steering committee activities. One major decision made was that the steering committee represents a constituency statewide. The steering committee activities and decisions are open and feedback and input is desired by all.

There is interest in the process being used to determine the functional requirements, which support the business needs and the data "features". A couple of issues were that some things listed as business needs are actually functionalities of a GIS. An example of this is routing and another is address geocoding. These needs will be kept as listed in the business needs document but will not be evaluated in terms of functionality to support because in fact they are a functionality. Another issue that came up was that of accuracy, as a business needs. What was agreed to was that accuracy is a way to describe the data that must support a business need. It is not a specific business need in and of itself. There was also a question that editing should be a functionality. It was agreed that editing is a function if the maintenance processes to be decided and not a "general" functionality to be supported. It was described by steering committee members that various matrices are being developed which will allow looking at business

needs by functionality and by data and data by various descriptions such as currency, accuracy, source and other things.

For more information on Tami's status presentation please see the presentation on the web site. Tami has detailed notes of the presentation along with the slides.

Various other reports were given on related activities. Pat Whittaker from the WSDOT Transportation Data Office gave a report on the Combined Transportation Inventory Project at WSDOT that is an effort to rebuild the Functional Classification Database. This database is the only one, which tracks all 80,000 miles of Washington's public roads. This data is very important in the FHWA funding and allocation of Federal dollars for roads. Right now the data is out of data. The effort is being made to include as many stakeholders as possible in the project and make the database as widely useful as possible.

Dave Rideout gave a detailed report on the National Map Pilot in Spokane County. The primary goal of the pilot is to build local partnerships. There was an April kick-off meeting with the Spokane County staff. There has been much time spent in licensing discussions. There were several contractual options considered, but they finally agreed upon using a license agreement for the data sharing. In August the county provided the USGS with 21 export overages including hydro, transport, structures and boundaries. Spokane County has spent around 100 hours, the USGS has spent around 100 hours and additionally the USGS has three staff members that are working on all four counties involved so the hours devoted to Spokane County are not singled out. One of the goals is to maintain the spatial integrity of the local data in a federal data set. There were some lessons learned that have significance to WA-Trans. These include:

- Data is not always in the same format. Spokane County doesn't maintain a single, comprehensive structures layer. They had a layer of schools and other layers which included specific structures so combining them was necessary to produce a structures layer. WA-Trans will probably encounter data in various places and forms to produce the best product. They had transportation cover ages of roads and addresses with functional class information in separate tables that can be pulled in as needed. Their numbering scheme was complex including type of road and type of surface. The USGS used a very simple classification system so all of the road classifications had to be simplified.
- Licensing will differ from organization to organization. Kootenai County in Idaho was able to give them the data very quickly, without a licensing agreement, while and it took several months to negotiate the licensing details with Spokane County.
- Data resides with different departments within an Agency and multiple agencies claim jurisdiction. This differs from county to county.

Dave was asked whether census data and local data would be incorporated into census data. The pilot is separate from census. Wendy Hawley from the U.S. Census Bureau pointed out that there is an agreement between USGS and Census that roads and boundaries layer in the National Map will come from the Census Bureau. Census has gotten files from Ian Von Essen of Spokane County. Eventually they will be the same.

Another question was whether there would be an ID number so data can be merged. Right now they are just putting the data together. A "standard" is waiting on the Geospatial One Stop Transportation Standard.

Ron Cihon gave a presentation on the Geospatial One Stop Transportation Data Modeling Effort, the Oregon T-FIT Data Modeling efforts and the purchase of street centerline data using the RFQ by WSDOT. Ron used some slides that will be on our project web site. He began with the Geospatial One Stop. This effort is driven by the US Department of the Interior and the Office of Management and Budget in the Federal Government. The Bureau of Transportation Statistics (BTS) of the US DOT is leading the transportation layer. The put together a Road Modeling Advisory Team (RoadsMAT). Ron emphasized that this is a standards driven effort that is based on the original FGDC standards for the transportation frameworks and the model is going to be submitted to ANSI for approval of the process or techniques for exchange of data.

BTS hired the Open GIS Consortium (OGC) as technology consultant to develop the model with the Road MAT team. The goal of this effort is a single web-portal to every participant's data. Ron pointed out that this is a philosophical choice that they are not trying to develop a nationwide coverage but rather a framework to use for exchange of data. Ron thinks homeland security is also a big driver of this process.

Some questions that haven't been answered is will the data standard be required for all federal agencies or for organizations getting federal money?

Ron discussed the model some. It will be LRS based (made to accommodate many LRS's). It is event based. They are not putting attributes on an LRS but using separate event tables to store data. The model includes a group of segments and events in tables. It will accommodate geometry and topology. It will accommodate any kind of segmentation. There are mandatory attributes.

The Road MAT team meets again in October to deal with some unresolved issues. One issue mentioned was the concept of road authorities and segment ID's. Who will be the "ID cop"?

Jerry Harless expressed his concern that they weren't modeling all modes together and there was no assurance that the modes would work together when the model was complete. Jerry would like to see WA-Trans model for all modes at once even if they aren't all implemented at once.

Ron also discussed the Oregon T-FIT Model and that it will be compliant with the Geospatial One-stop. It is an all roads framework model to be housed and maintained at ODOT. They plan to test the model in one county. They are going to present the model at the next IRICC Roads meeting and we will know more then.

The group began going through the business needs draft. It was suggested that the business functions using category be more generic and that everywhere PSRC is

specified as a specific partner using it be changed to MPOs and RTPOs. The attendees decided they needed more time to study the document so they can have two weeks to study it and they need then to send feedback to Tami. It was strongly stated that this is the window of opportunity to provide feedback on this document and the steering committee is moving forward to use this information and will not wait for partners who don't take the time to look at the document now. It was recognized that new business needs will be discovered, but we can't wait or the project will not finish.

The meeting was concluded by going through the list of ideas and action items and assigning them to partners to follow-up with. A spreadsheet was created to track this and will be sent out to partners.

Some agenda items for the next meeting include a presentation on the US Census Bureau's TIGER modernization effort and updates on the Road MAT effort.

The next meeting is December 10, 2002 in Olympia.

WA-Trans Partners
Action Items List

Activity or Idea	Responsible Party	Date
Using in-kind labor and making sure what is done will work for both WA-Trans and any USGS National map pilot	Wendy Hawley, Weston Systems	
Thoroghly mining grant opportunities especially homeland security	Carrie Wolfe	
Coordinated budget requests for the supplemental session	ISB Subcommittee	
Distributing hosting of WA-Trans		
Terrorism Money		
Public private concern with emphasis on private	Weston Systems,Larry provide contact PNWNL	
Pay a private company to develop WA-Trans		
Look at technical trans program (T2 - WSDOT Local Programs)	Roger Chapelle	
Census update opportunities	Wendy Hawley	
Leverage current funding based on business needs assessment		
Look at Tourism/ public use/ citizen arena	Doug Mackey	
Involve tribal government and local government	Carrie Wolfe	
Investiage Navtech		
Some major oppurtunities exist with looking at using it for resolving transportation problems like congestion, public safety, emergency management, and alternate routing.		
Economic development money		
Trip planning		
FEMA grants		
Use Universities for less expensive labor using students and grad students	Jerry Harless, Lisa Stuebing	
Determine levels of commitment regarding resources, hosting data, providing funds		

WA-Trans Partners
Action Items List

Provide contacts to Tami		
USDA Funding Precision Forestry Initiative (coupled with small land owner outreach program) flying with LIDAR that provides location info for roads, etc.	Carrie Wolfe	
Farm Bureau Contact	Carrie Wolfe	
Salmon recovery funding board	Carrie Wolfe	
Technology Data Pool Fund through SRFB	Carrie Wolfe	
Reconnect with Ann Goos of the Washington Forest Protection Association	Tami Griffin	

WA-Trans Partners Meeting Notes
June 11, 2002

Facilitator: Tami Griffin - WSDOT

Olympia Attendees: Lisa Stuebing – Mason County, Tracey Fuller – U.S.G.S., Mark Finch – WSDOT, Dennis Schofield – Oregon DOT, Terry Graham – WA DNR, Dan Bode – WA DNR, Michelle Blake – WSDOT, Carrie Wolfe – WA DNR, Bob Oennings – WA Enhanced 911, Ron Cihon – WSDOT, Dave Irwin – WA Enhanced 911, Dave Rideout – Spokane County, Dave Collum – WA Utilities and Transportation Commission, Jeff Holm – WA Dept. of Information Services, Jerry Harless – Puget Sound Regional Council, Dane Bode – WA DNR; George Spencer – WSDOT.

Seattle Attendees: Larry Brotman – ESRI, Tareq Al-zeer – WSDOT.

Vancouver Attendees: Dale Guenther – Regional Ecosystem Office, Paul Newman – Clark County

WA-Trans Status

The meeting began with a presentation regarding project status. Please refer to slides in our web page for an outline of the presentation. The highlights included:

- A discussion of project management deliverables including the business needs gathering effort. Tami is going to have a WSDOT business needs document for the meeting on July 16 with the Steering Committee. Dan Dickson from CRAB is working on developing a business needs document for work done prior to Tami starting to work on the project. The combination of these two documents will be evaluated at the meeting and an assessment of additional business needs to collect will be done. This will affect the timeline of the Phase I work plan.
- Ten new partners have committed to participating since the last meeting.
- A steering committee has been organized. Their first meeting is July 16.
- We are still missing some local participation. We are looking for a participant from a more populated west side local government and from another east side government. We are also looking for a participant from transit.
- There are several other related projects going on at the same time. Several of these were discussed.
- Ron Cihon discussed purchasing data. WSDOT is developing an RFQ for purchasing road data. It is not clear how well this will work. The data is frequently not as accurate as some of the counties better data. It also has significant licensing restrictions on the use of it. The RFQ may be for just one agency, multiple state agencies or state agencies and local government. This is just a stopgap measure until there is framework that is public domain. E-911 and other groups have a significant need for this data now.
- George Spencer discussed participating in the BTS Geospatial One Stop Transportation Framework effort to develop a national content standard. They are looking for local participation. Please contact Mark Bradford at mark.bradford@bts.gov or go to *http://www.bts.gov/gis/geospatial onestop/index.html* for more information ASAP.

WA-Trans Cost and Time Estimates

Tami also presented the cost estimate developed for a decision package on WA-Trans through WSDOT. The total cost and related information can be found in the presentation. There were many assumptions, which went into the estimate that could prove to be untrue and change the figures. Some feedback received:

- The time line being too long for E-911 (timeline is based upon 6 technical FTE and a project manager participating full time.) That is why purchasing data is part of the solution for them.
- It was felt that the hardware estimate might be too small.
- It was expected that in kind labor contributions were much more likely than money.

Brainstorming activities lead to the following suggestions for funding or providing resources for the project. The following are the suggestions received:

- Using in-kind labor and making sure what is done will work for both WA-Trans and any USGS National Map Pilot.
- Thoroughly mining grant opportunities especially homeland security.
- Coordinated budget requests for the supplemental session.
- Distributed hosting of WA-Trans.
- Terrorism money,
- Public private concern with the emphasis on private.
- Pay a private company to develop WA-Trans.
- Look at technical transfer program (T2 – WSDOT Local Programs)
- Census has a big project with money. There may be partnering opportunities.
- Leverage current funding based on business needs assessment.
- Look at Tourism/ public use/ citizen arena, parks, and tourism events like Lewis and Clark bring in a lot of people.
- Involve tribal government and local government.
- Investigate Navtech. They have a lot of good data and their motive for keeping it good is business oriented.
- Some major opportunities exist with looking at using it for resolving transportation problems like congestion, public safety, emergency management and alternate routing. (could cut accidents resulting from other accidents by 2/3 if original accident was removed quickly, routing vehicles around an accident and to an accident).
- Economic development money
- Trip planning
- USGS and Department of Defense have purchased Navtech.
- FEMA grants
- Universities are good sources of less expensive labor using students and grad students.

Oregon Transportation Framework Presentation

Dennis Schofield of Oregon Department of Transportation (ODOT) gave a presentation on the Oregon Transportation Framework Effort. Some highlights of the presentation include:

- The original effort called ORBITS failed because no one was mandated to support the data model.
- Oregon has a top down approach which includes each state agency paying a "fee" based on the number of employees for GIS This produces money which is given as "grants" to organizations working on framework type projects. FIT

(Framework Implementation Team) is comprised of state agencies but has no road authorities. T-FIT (Transportation Framework Implementation Team) is comprised of representatives from a wide variety of road authorities. Their transportation framework effort has a list of items to be included but they will focus first on roads, bridges and culverts.

- They are taking an entrepreneurial approach to funding and developing it.
- One of the earlier efforts funded by ODOT was to develop a database of all Oregon Road Authorities and their GIS data. It was done using temporary summer help. It took them 6 person months. They began with the statutes defining road authorities and worked from there. This is used to determine responsibility for the data. (***Note*** *– this may be something we need to do*)
- ODOT determined that they are responsible for all road related issues by looking at statutes and their sphere of responsibility.
- ODOT has no influence on software used. They are trying to develop a database that is software independent. They must be able to receive and send in different formats.
- They are spreading work out with their Information Services to get it done.
- ODOT has made some changes in service levels in cartography to allow for retraining staff in GIS and doing work on the framework.
- Dennis has found that one-on-one contact with Counties and Cities that produce roadway data can facilitate a data sharing agreement where none would be possible otherwise.
- For Wasco County pilot they had to go to court to get the use of the County data because the data is normally sold.
- ODOT has a vision for one year. They can't go farther than that.
- They chose not to purchase data. There was a lot of reasons but their public disclosure laws was what they finally used to make the decision.
- They also were unsuccessful in negotiating exchanges of data with vendors. The vendor would not commit to putting updates in a particular release, which was unacceptable to the partners.
- They may investigate selling the data back to vendors once it is done.
- Doing Wasco County was the right thing to do. They learned a lot from the experience.
- They want to either produce legislation or boiler plate agreements for data sharing.
- There are reengineering their annual business process for getting road data from the counties to include GIS.
- They are producing a road layer with accident data that can be used to get safety money to do an extra county with.

Notes *are Tami's editorial comments*

Dennis' presentation generated a great deal of comments and questions. There was a great deal of interest in the road authority survey. Dennis has agreed to send us the FTP site so we can access it. It was mentioned after looking at the report that the road authorities are divided into seven grouping. Washington may have the same groupings. It was suggested that Terry Simmonds at WSDOT might know about the different road

authorities. OFM may also know. There was also comment that Oregon's top down approach was a good one. Dennis commented that it took them several years of struggling bottom up to get a top down approach going. Please refer to Dennis' slide on our Internet site for more information.

USGS National Map Presentation

Tracey Fuller presented information regarding the National Map Project the US Geological Survey is doing and the pilot that some counties in Washington are participating in. Highlights from this presentation include:

- USGS is working with the University of Idaho and the University of Montana to connect Arc SDE databases through IMS so when you look at the edge of Idaho on the Map you get the Montana data. This has been successful so far.
- They haven't yet put in the raster data but a user can now clip out and download vector data.
- They are not yet able to produce topographic maps.
- USGS has a long-standing cooperative research agreement with ESRI that is not yet affiliated with the National Map Pilot here.
- They are waiting if possible for the NSDI and Geospatial One Stop effort that BTS is leading for standards. The National Map must be compliant with this.
- The Texas pilot used jurisdictional anchor points to determine road jurisdictional boundaries.
- Census is going around county by county to determine who to work through. Their RFP closed a few weeks ago. Tracey and the USGS are trying to work with Census to get it to include the local data and be consistent with the National Map.
- USGS has three people who can build data to meet a model. If we give them a model they will build data for us if possible. (***Note*** *- This may be something to keep in mind!!*)
- All the Arc IMS work to build the front end can be used as public domain. (***Note*** *– Another opportunity to maybe save some money by reusing some of their code.*)
- USGS is seriously looking at homeland security drivers for content and attribution and partners with that data.
- A Seattle-Tacoma pilot was proposed as the highest priority for future pilots with the National Map. (***Note*** *- WA-Trans may want try to partner as well*)
- There is a proposal to expand the existing four county Washington Idaho pilot to six additional counties. That is three in each state. In Washington that would add Ferry, Stevens, and Lincoln counties. (***Note*** *– WA-Trans needs to get the people from these counties to participate and try to get Pend Orielle to participate now!)*
- They are trying to get a complete implementation of the Pacific Northwest (PNW) region.

Notes *are Tami's editorial comments*.

That is the complete notes from the meeting. Please see our WA-Trans website to get copies of Tracey's presentation.

Action Items and Commitments

1. Doug Mackey of Washington State Parks has committed to contacting Tourism.
2. Wendy Hawley of US Census has said the Census Bureau may be able to provide resources including equipment, processing of data and possibly dedicated staff time.
3. George Spencer will submit Jerry Harless as a reviewer to the BTS Geospatial One Stop. He will also send Jerry's concerns about the need to combine the different modes.
4. Please look at the list of ideas and determine if you can take ownership of investigating any of them. I need assistance determining grant opportunities and writing grant proposals, contacting potential private partners and many other items on the list.
5. Please follow up with those in your organizations that have authority over money and resources to determine what level of commitment you might be able to make regarding providing resources, hosting data, providing funds are anything else.
6. I need assistance getting more local involvement. If you have any knowledge of possible contacts or could contact potential partners your self to solicit involvement that would help a great deal!
7. I need suggestions and contacts who could fill the last three spots on the steering committee.

Washington Transportation Framework
Stakeholders Group Meeting
March 13, 2002

Attendees

Name	Organization	Phone	Email	Steering Committee
Gordon Kennedy	WSDOT - IT	360-705-7641	Kennedg@wsdot.wa.gov	Mmmm?
Nadine Jobe	WSDOT - TDO	360-570-2398	joben@wsdot.wa.gov	
George Spencer	WSDOT - Geo. Svcs	360-709-5515	spenceg@wsdot.wa.gov	
Pat Whittaker	WSDOT - TDO	360-570-2370	whittap@wsdot.wa.gov	
Paul Bender	Portland State U.	503-725-4028	benderp@pdx.edu	
Ken Duker	Portland State U.	503-725-4042	duekerk@pdx.edu	
Ron Cihon	WSDOT - Geo. Svcs	360-709-5510	cihonr@wsdot.wa.gov	yes
Dan Bode	DNR	360-902-1249	Dan.bode@wadnr.gov	
Ken Reister	DNR	360-902-1509	Ken.Reister@wadnr.gov	Someone at DNR
Jennifer Landaas	Weston	206-521-7678	landaasj@mail.rfweston.com	yes
Lisa Stuebing	Mason County	427-9670 x769	ls@co.mason.wa.us	yes
Dave Cullom	WUTC	664-1141	dcullom@wute.wa.gov	yes
Carrie Wolfe	DNR	902-1639	carrie.wolfe@wadnr.gov	Terry Graham
Nancy Tubbs	USGS/NMD	503-251-3210	ntubbs@usgs.gov	Yes, me or Gene
Larry Brotman	ESRI	206-749-0533 x12	lbrotman@esri.com	possibly
Wendy Hawley	US Census Bureau	206-553-5906	wendy.hawley@census.gov	yes
Dale Guenther	REO	503-808-2188	dguenther@fs.fed.us	yes
T. Allen Blake	WSDOT - TDO	360-570-2363	blaket@wsdot.wa.gov	
Michelle Blake	WSDOT - IT	360-705-7797	blakem@wsdot.wa.gov	possibly
Douglas Mackey	State Parks	360-902-8691	doug.mackey@parks.wa.gov	
Tami Griffin	WSDOT	360-709-5513	griffit@wsdot.wa.gov	NA

What Has Been Happening Since the Last Meeting:

1. Tami began as project manager mid-November 2001. Her background is in IT applications and IT project management. She is learning GIS.
2. WSDOT contracted with Portland State University, using a USGS Grant to have Ken Dueker Ph.D. to write a white paper that would provide some direction for the transportation framework for Washington State.
3. The charter has been rewritten and a new draft is presented at this meeting for feedback.
4. Tami evaluated all the work of the previous effort available and came to the conclusion that a detailed effort to gather business needs is the basis for all future work on the project. The framework will facilitate meeting those business needs. It is part of the solution in that it will meet various data needs of partners. However it will not meet all of them. There is still a need for applications and for specific application centric databases to meet the needs.
5. Business gathering has begun for WSDOT for a variety of reasons. First that is where she knows people so the logistics were easier while she was becoming familiar with the project and technology. Second, Tami's time and FTE belong to WSDOT and so her time needs to

be justified as being spent on this project. In terms of how this is benefiting WSDOT and getting further funding from WSDOT we need to show the project has value to the Agency. By pursuing WSDOT business needs some fairly compelling needs have been identified to justify the project. The same effort will be extended to gather information on business needs outside the agency. This effort should begin within 2 months.

6. Tami and Ron Cihon went down to Oregon and attended a meeting they were having to try to restart their transportation framework effort they are working on a new funding driver. They have some money to spend by the end of the biennium that was legislated for the effort. Also E-911 has an FCC mandate, which requires statewide base maps with address ranges. There is money charted on every phone bill to pay for E-911 services. If the state doesn't do it they will find some other way to do it and there will be competing frameworks for transportation.
7. There is also a trip planner project that again, we are working on with Oregon, that has a need for statewide base map. They don't need it quite as soon but it is a possible funding source.
8. There has been an effort to identify possible funding sources. It was explained that funding could impact the priority of functionality produced in various releases of the framework.

Discussion of Updated Charter:

Tami updated the charter so the identification of business needs and business requirements would be included in the project. She is looking for feedback on the charter. Items discussed included:

1. Tami called the project the TFW for Transportation Framework. It was identified that TFW is recognized, particularly in natural resource organizations as having a particular meaning so we are looking for another name for the project. **Please provide feedback on ideas for this.**
2. There was a scope discussion. The charter has a high level general scope until business needs are identified and requirements are prioritized. That will lead to a specific scope. Until there is a more complete view of business needs the scope will remain less specific.
3. The new charter has the original critical success factors and action items were identified for them. There were some factors added. These are bolded. **Please provide feedback on action items if there are concerns or comments**.
4. Four new deliverables have been added. These are:
    a. Business needs – Allow people to see how the project benefits their organizations, assists with prioritization of project requirements, can extract business requirements from them. This helps justify project decisions.
    b. Business Requirements
    c. Cost Benefit Analysis – justify what is being spent. Use this to obtain funding and explain project decisions. Stakeholders will be asked to assist with determining cost benefit.
    d. Project Reports
5. Assumptions – There was quite a discussion regarding the assumptions.
    a. It was recognized that several of the assumptions look like risks. Tami said that these assumptions must hold true for this plan in the charter to work. However, she recognizes that some assumptions are risks and will be doing a risk assessment very soon which will identify these things and recommend exposure and mitigation strategies.

b. Assumption 2 points out the WSDOT will not fund the whole thing. That other sources of funding must be made available to work on this. WSDOT's pocket has a time constraint. They can't fund this project indefinitely
c. It was recommended that the wording be changed to "funding and resources" because partners can provide either or both.
d. When asked if we were using funding and resources synonymously it was stated that there need for stakeholder input even for those who can't afford to provide resources or funding right now. It should not be interpreted that stakeholders shouldn't participate if they can't provide either. If stakeholders are excluded the framework will not meet the needs of the state and won't be used.
e. When asked about which modes were assumed from the word "transportation" it was stated that nothing is excluded as far as scope. However, what is implemented in the first and second releases may be limited. The goal is to have a plan that eventually meets all scope (modes) and functionality (attribution) and accuracy over time. The first release will be simpler.

6. Project funding was discussed. It was stated that at the end of the '01-'03 biennium (June, '03) we have to sit back and evaluate the level of participation, progress, funding and resources and determine if WSDOT can afford to continue to support the project. While there was a desire in some to determine the level of commitment to provide support at this meeting, it was determined that until there is plan and specific requirements for types of resources and funding it was impossible to determine whether they could be involved. Lisa Stuebing from Mason County stated that they are in and interested but broke. They want to cooperate so when they have data it is set up correctly.
7. The last section describes the phased iterative approach. Phase I is business needs definition and planning. Identify as many business needs as possible. Do the cost benefit. Develop a comprehensive data model. Phase II is pilots, and phase III is a first release. The iterative approach is explained in the charter as well. Because of all the identified needs the project should be implemented in pieces. To implement the entire project would be very high risk. When asked how priorities would be rated for determining what functionality would be included it was stated that the steering committee would probably decide how this was done. Some things have to be there is there is no framework and some things have higher priority because of the funding source or something that will meet several needs rather than an isolated need.

Please provide feedback on the charter. Tami will send out a request by e-mail and provide a deadline to respond.

Steering Committee Membership Discussion:
Tami worked on projects where the decisions were difficult to make/get. The goal is to provide this project with some sort of support structure that is committed in terms of time. This group is responsible for making project decisions, manage change and scope, and help resolve project issues. They would meet monthly and maybe more during particularly important sections such as defining requirement and priorities and data structure.

The group would be 10 to 12 members, maybe 2 from a county or city in eastern part of the state, 2 from the west side or county, a member of an MPO, WSDOT. DNR, USGS, Census, private

sector, etc. There was a concern that rural counties had some representation. People were asked to specify interest. Tami will make sure a representative group is made up. There were some groups not at the meeting so an effort will be made to reach out to them.

National Map Initiative:-

Tami is in contact with Ian Von Essen from Spokane County and Tracey Fuller from the USGS who is working a pilot for the National Map. Nancy Tubbs from the USGS explained the project. The National Map initiative is trying to provide nationwide coverage on the web, public domain data, in various scales depending on what is needed. A large piece is partnering at all levels with other agencies and organizations to find the best data. There are 9 pilots and one is with 2 Washington counties and 2 Idaho counties. One from each state is GIS enabled and the other is not. Tami thinks there may be opportunities to get involved and use as a possible pilot for transportation framework. If we can piggyback on their efforts we may get some real information to assist us.

White Paper on Issues and Strategies for Building a State Transportation Framework:

Ken Dueker provided background on his paper. He feels that much more effort must be paid in the planning effort. That should be at least 10% spent on design and planning. Ken worked with the IRICC (Inter-organizational Resource Coordinating Control) under the Federal Government. They provided feedback along the way, but now this group needs to decide if this approach will work for us.

Ken provided a high level overview of his paper and findings. He presented his approach. In Oregon they have developed a compilation of the best available line work by a single contractor pulling information together. Another approach is a modular approach where the information is compiled by each agency and input and it is built cooperatively. Another approach is to purchase data.

The other area that is critical is maintenance. In Ken's effort to look at what other states are doing they are putting 98% into development and 2% into maintenance. The data will become obsolete too quickly if a maintenance plan isn't developed up front.

Some comments include:

1. Ron Cihon mentioned that the meeting in Oregon was enlightening regarding E-911 in that you have to be opportunistic. If you don't someone else will. Ken said emergency response needs to be a major player, but we need to be careful not to over commit. How we increment them into the project is important. Ten years ago Oregon contracted with Etech for this product. It failed because the counties felt that any data input into the system they lost control of. We need to do it better than an outside vendor or work with outside vendors so the framework will give them what we need.
2. A comment was made that we need to quantify why we are doing this instead of letting some outside vendor do it. Tami said if we get the business requirements then we can look at all the options and maybe purchasing would be a viable alternative. We need to know what we want first we need enough to write an RFP that would include things like data sharing and maintenance, etc. We haven't been able to get real cost figures for things like that.

3. Ken was asked if he was advocating the least amount of accuracy necessary for the framework model. Why aren't we looking for the most? Ken's response was we already have TIGER. It is not that accurate but is inexpensive. Public works dismissed it because it didn't have enough accuracy. If business needs warrant it and it is funded accuracy will be built in. There are plans to make TIGER more accurate to within 3 meters. Wendy Hawley from US Census Bureau responded that the decisions are being made still and will be fully detailed at the end of the fiscal year.

Tami wanted some specific type of feedback about the white paper. She will send out an e-mail with the questions and will specify a response time. This paper will be used as the approach if this group approves it. She wants feedback on the business needs and accuracy levels defined on pages 14, 15 and 17. She wants feedback and/or approval of the approach defined on page 23. This will affect how the plan is constructed. She wants feedback on proposed pilots on page 27.

There was positive feedback on the concept of checking data in and out. The hydrography framework effort was discussed in relationship to this. It is an example. There is URL for the hydro clearinghouse that was referred to: http://hydro.reo.com. This framework allows you to look around but you can't check data out unless you have a password. This clearinghouse has designated data stewards to maintain the data. They can make changes but no one else can.

There was a comment about the clearinghouse concept. If it becomes real and the information is going to flow and the security issues are dealt with it will require some political support to get the data entered and the participation needed. Tami mentioned that we don't want to build something we can't maintain. It will be very difficult, but if we don't figure out how to maintain it up front we shouldn't build it. She feels the clearinghouse is critical part of that. It was mentioned that one of the premises this project is based on is recognizing that money is being spent on poor data everywhere, sometimes redundantly. Some of this effort can be redirected to the framework. Tami mentioned that we are in the process of getting some of WSDOT executives involved and more informed. That is an avenue for executive attention. We need to show the cost benefit and cost avoidance opportunities.

Tami will send the minutes out and questions for feedback. She will ask for feedback within a particular time frame and if nothing is sent will assume all is well.

She will also send out a schedule of meetings (quarterly) for the stakeholders group. She will notify of the members of the steering committee.